



FIELD TRIP REPORT

Gillian Harris, INPAWS
South Central Chapter

Plaster Creek Seeps Rich in Mosses and Lichens

On a brilliant morning last October, thirteen INPAWS members accompanied field trip coordinator Lynn Dennis and bryologist Bill McKnight to Plaster Creek Seeps in southern Indiana's Martin County.

One of only a handful of acid seep springs in the state, this Nature Conservancy Preserve is noted for harboring a number of plant species far south of their normal range. It is also known for the awesome sandstone cliffs that tower above the creek bottom forest.

On this day, Bill led us along the dry oak-hickory ridge above the cliffs, where he exuberantly pointed out the



Bill McKnight shares his expertise, soon to be captured in a book on bryophytes (hornworts, liverworts, and mosses) of Illinois and Indiana. Photo by Gillian Harris.

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wide variety of mosses and lichens that carpet the forest glades there.

Windswept moss (*Dicranum scoparium*) and pincushion moss (*Leucobryum albidum*) were among the most common, their verdant color and texture often accentuated by gray-green *Cladonia* and *Cladonia* lichens, and by the creeping ever-

green herb partridgeberry (*Mitchella repens*). Nestled in the cushions of moss were also numerous dark, glossy acorns that had fallen from the rock chestnut oaks (*Quercus prinus*) above us. Mosses, Bill explained, serve as an invaluable germination bed on the dry, sloping forest floor.

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INDIANA NATIVE PLANT and Wildflower Society

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INPAWS Mission

To promote the appreciation, preservation, conservation, utilization and scientific study of the flora native to Indiana and to educate the public about the value, beauty, diversity, and environmental importance of indigenous vegetation.

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INPAWS is a not-for-profit 501(c)(3) organization open to the public. For membership information, visit www.inpaws.org.

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Among The Best

Karen Hartlep

Greetings Native Plant Enthusiasts!

Thank you all for the opportunity to serve as your president for the next two years. I'm excited to be working with such a talented, diverse, energetic group on a wide range of endeavors that enhance our lives and the health of our environment.

One of the interesting perks of my new position is receiving newsletters from native plant societies across the country—thanks to Janice Gustafarro and Ruth Ann Ingraham for setting up this exchange. It's been gratifying to realize that INPAWS' programs, activities, newsletter, annual conference, and plant sale rival the best of these other organizations. About the only thing we're lacking is horticultural humor in our newsletter ("Why did the botanist cross the road? To get to the other sedge.")

Our first Council Meeting has already taken place, and great things are in the works.

New plant sale co-chairs Melissa Moran and Tom Hohman are well on the way to coordinating a fabulous effort for Saturday, May 13, at the Indiana School for the Blind. Volunteering at this event was my introduction to INPAWS, and I highly recommend this frenetic, fun half-day of "work" with a bunch of like-minded people.

We also have a new Speaker's Bureau chair in Julie Beihold, who is actively scheduling for this spring and beyond.

Opportunities for INPAWS involvement abound. Please check the listing opposite or visit the website to make contact with our Committee Chairs. The members of our dedicated, hard-working core group of volunteers are eager to greet you!

I look forward to meeting and working with more of you over the next two years. Have a Great Spring.

Karen

"Plant-a-Million" Promotes Neighborhood Tree Planting

A new conservation project aims to educate the public about the value of trees and get one million trees planted in central Indiana over the next ten years.

Many newly constructed homes in the area are virtually bare of trees and shrubbery. They lack tree "canopy," though the America Forest Foundation recommends residential areas have about 60 percent canopy cover when the trees mature. The tree canopy cools the air around the house, reducing air-conditioning costs. It provides shade, improving the quality

of life. Trees and shrubs add value, making homes worth 20 to 30 percent more than homes without trees.

Plant-a-Million is sponsored by Hoosier Heartland Resource Conservation and Development Council (RC&D), a unique organization providing a framework to develop partnerships and alliances among local citizens, governments, and technical experts to solve resource problems. Among the cooperating partners are the ten local Soil and Water Conservation Districts (SWCD), the Cooperative Extension Service Boards, and the County Commissioners.



Old growth tuliptrees (*Liriodendron*) in North Carolina preserve. Photo ©C. Colston Burrell.

Soil and Water Conservation District officers advise farmers on how to manage their natural resources, helping them reach production objectives while protecting the soil, water, plants, and animals. Through the Plant-a-Million project, they are now helping urban residents develop a similar plan for their backyards. They provide educational brochures and encourage neighbors to get together for a neighborhood effort.

For information, visit www.hhracd.org/plantamillion.htm.

Plaster Creek Seeps, continued from page 1

When we weren't hunkered down examining bryophytes, we meandered through a wood of mature oak and hickory trees whose copious nuts crunched beneath our feet. In a more open area we came upon the delightfully named farkleberry (*Vaccinium arboreum*) which, unlike its congeners the blueberry and cranberry, grows treelike in size and habit and bears inedible fruit. Post oak (*Quercus stellata*) was also common, and we were awed by the blazing scarlet crown of a black gum (*Nyssa sylvatica*). Its bluish black drupes were profuse but so high in the tree that they were visible only through binoculars.

As Bill led us back along the ridge, sandstone outcroppings began to emerge, the stone layered and sculpted into intricate patterns. Some were bedecked with liverworts and ferns, including pleated liverwort (*Plagiochila porelloides*), lady fern (*Athyrium filix-femina*), and blunt-lobed woodsia (*Woodsia obtusa*). These sandstone shelves were but a hint of what lay beneath us down in the Plaster Creek bot-

toms, and incentive, all agreed, to revisit the geologically and botanically unique seeps another day.

Other mosses encountered on the walk were:

Woodland bald moss (*Atrichum angustatum*)

Tiny broom moss (*Dicranum montanum*)

Feather moss (*Fissidens* sp.)

Rock moss (*Grimmia* sp.)

Hoary moss (*Hedwigia ciliata*)

Woodland hair cap moss (*Polytrichum ohioense*)

Fern moss (*Thuidium delicatulum*)

Also the liverwort *Lophocolea heterophylla* (no common name yet)

Cladonia lichens are fruticose (bushy in appearance) and collectively known as reindeer mosses. *Cladonia* lichens have a squamulose (scale-shaped) base from which an upright fruiting body forms. The most familiar *Cladonias* are British soldiers (*C. cristatella*) and pixie-cups (*C. chlorophaea*).



Partridgeberry creeps through a carpet of moss and lichen on the forest floor above Plaster Creek. Photo by Gillian Harris.

Annals of a Duneland Orchid, Part 2

Barbara E. Plampin, Ph.D.
Shirley Heinze Land Trust

Last issue, we followed the tribulations of a duneland orchid as members of its dense colonies faced annihilation by bulldozer or were ground to dust by creators of a new trail. The saga continues.... —Ed.

March, 2005. Our Pauline, downy rattlesnake plantain orchid (*Goodyera pubescens*, or DRPO), is again imperiled: The commuter station parking lot is extending still farther into its home. Fortunately, the railroad invites Indiana Dunes National Lakeshore (IDNL) to rescue plants—ASAP, construction imminent.

Early Summer, 2005. IDNL searchers are dismayed at their failure to find even one DRPO. No construction yet.

Mid-Summer, 2005. IDNL botanist allows that his crew mightn't have gone far enough in seeking the DRPO. Fearing construction wipeout, he nevertheless sends biotechnician Emily Palmquist with volunteers Myrna Newgent and me on a search.

August, 2005. Sharp-eyed Myrna, parting shrubbery with her magic walking stick, finds a colony of 100. Throughout the morning, cries of "More! More! More!" rend the air. Approximately 200 orchids are flagged by noon.

Later That Day. IDNL botanist is excited, will supervise transplant unless bulldozer intervenes. Where to put DRPO? I suggest orchids could join friends and relations near DRPO found elsewhere in 1995.

Later That Week. Emily and I reconnoiter sites.

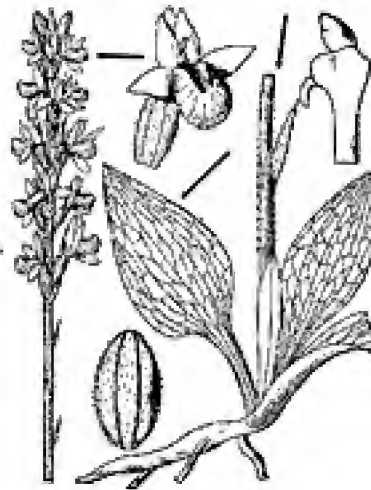
Early September, 2005. Bulldozer still absent. IDNL crew of 11 digs orchids with spades and "installs" (Parkese for *transplants*) in suggested spots.

September 13, 2005. I'm taken to see the transplants. I meet biotechnician watering with backpack sprayer. One hundred seventy-five orchids divided into 25 "units" are scattered among three sites "where plants have been known to grow historically" in Park jargon. All units are provided with numbered stakes for monitoring. Sites are GPS'd. Only three plants show wilt from the move. Hooray! Will plants survive the winter?

Question: How to account for 25 or so missing orchids? We'd flagged 200; however, botanists can differ about what constitutes a single orchid plant. If a DRPO did get left behind, I hope the folklore associated with DRPO's cousin lesser rattlesnake plantain (*Goodyera repens*), unknown in Indiana, applies: People who step (drive?) on it become disoriented and lose their way.

November 23, 2005. Local paper reports 116 new parking places in use at the commuter station. Moreover, "additional land is available, if needed." The "additional land" has soil probably too heavily saturated for DRPO, but the curious little gentian cousin screwstem (*Bartonia virginica*) has been seen here....

A screwstem saga in the making? The author laments that a vacation and health problems made her less attentive to the orchids' plight than was desirable. But she also wonders why IDNL did not take action sooner. —Ed.



Goodyera pubescens in N.L. Britton and A. Brown. *An Illustrated Flora of the Northern United States and Canada*, 1913.

Some Books

Erichsen-Brown, C. *Medicinal and Other Uses of North American Plants: A Historical Survey with Special Reference to the Eastern Indian Tribes.* Dover, 1989.

Homoya, M. *Orchids of Indiana.* Indiana Academy of Science, 1993.

Swink, F., and G. Wilhelm. *Plants of the Chicago Region.* 4th edition. Indiana Academy of Science, 1994.

Yatskievych, K. *Field Guide to Indiana Wildflowers.* Indiana University Press, 2000.

Finding Plants on the Web

Some helpful hints from INPAWS webmaster Marcia Moore:

Today's sophisticated search engines (Google, Yahoo, Firefox, etc.) do not require complicated word strings to search for a site. In the past, when we wanted to research a card catalog or older computerized catalogs, we would look for "native plants, Midwest." Now we can simply enter "Midwest native plants"—no need for commas or other punctuation—and a list of sites will be revealed. This is true of any search engine on any Web browser.

The bottom line: Keep your searches simple and concise and you will easily locate any information on the Web.

Apiaceae = Umbelliferae = Carrot Family

Worldwide, the carrot family boasts 275 genera and 2,850 species. Indiana has 28 genera and 37 species.

Characteristics

Aromatic biennial or perennial herbs with hollow, furrowed stems. Leaves are compound and alternate with sheathing bases. Inflorescence is an umbel, with flowers opening from outer edge to center. Flowers with 5 parts, often with yellow or white petals. Stamens alternate with the petals.

Fruit is a schizocarp, a dry fruit that splits down the center to yield two 1-seeded parts.

Economic Importance

Parsnips, parsley, carrots, celery. Seeds with aromatic oils: caraway seeds, dill, coriander, cumin, anise, fennel, chervil.

Some Apiaceae in Indiana

Native

One of our earliest flowering plants:

Harbinger-of-spring, *Erigenia bulbosa*

Common summer bloomers in the woods with mostly inconspicuous flowers:

Aniseroot, *Osmorhiza longistylis*
Black-snakeroots, *Sanicula* spp.
Honewort, *Cryptotaenia canadensis*
Sweet-cicily, *Osmorhiza claytonii*

A few prairie plants:

Golden alexanders, *Zizia aurea*
Rattlesnake master, *Eryngium yuccifolium*

Marshes and moist woods:

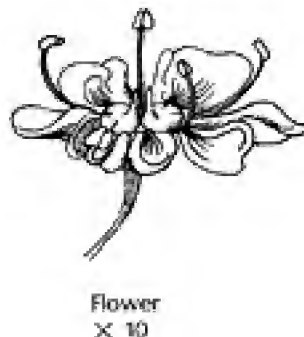
Cow parsnip, *Heracleum sphondylium*
Water hemlock, *Cicuta maculata*
Poison hemlock, *Conium maculatum*
Purple-stemmed angelica, *Angelica atropurpurea*
Water parsnip, *Sium suave*

Wild parsnip, *Pastinaca sativa*. Avoid this plant! It is a biennial most easily identified by its flowers, but it also has distinctive leaves when you know what to look for. Many years ago INPAWS Vice President Ellen Jacquart and I were measuring royal catchfly (*Silene regia*) plants for a demographic study. These prairie plants persist in Indiana in some roadside ditches. Ellen and I broke out with a horrific rash on our arms. Turns out wild parsnip was also in the ditches. It can cause a contact dermatitis similar to poison ivy but without the itch. Weepy blisters appear after exposure to the plant, triggered by sunlight. I've read that beggars used to rub themselves with the plant in its native Europe to look pathetic. I now recognize the leaves.

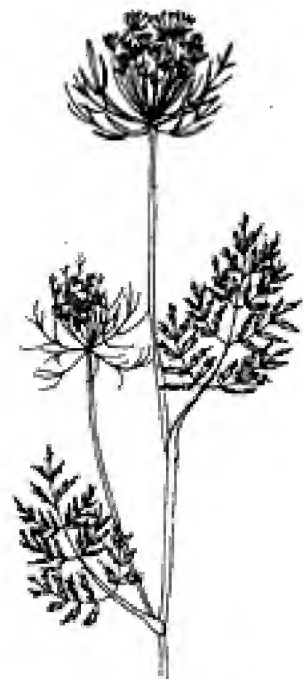
Illustrations from J. Glimn-Lacy & P.B. Kaufman, *Botany Illustrated*. Chapman & Hall, 1984.



Habit
first year
X ½



Flower
X 10



Fruiting Shoot
second year
X ½

Plant Life of Kentucky

An Illustrated Guide to the Vascular Flora

By Ronald L. Jones. 2005.
The University Press of Kentucky.
856 pages, 7 x 10", Cloth. \$75.00.
ISBN 0-8131-2331-3.

The Plant Life of Kentucky is described as the first comprehensive guide to the ferns, flowering plants, and woody plants of the state, and indeed it fulfills that description, and much more. The author clearly has a passion for the flora and a desire to instill it in others. The 105-page introduction, full of fascinating and useful information, could almost stand alone as a separate publication. The state of Kentucky has a rich history of botanical exploration, and Jones follows it from the Antebellum Period (prior to 1860) to the present day. I found the biography of Charles Short (1794-1863) especially interesting, as he was the discoverer (and eponym) of the federally endangered Short's goldenrod (*Solidago shortii*), a plant we just recently discovered in Indiana.

Most of Kentucky's approximately 2,600 taxa of vascular plants are addressed in the text with scientific name, common name, habitat, distribution in the state, a statement of abundance, and assigned wetland category. They are arranged in the text alphabetically by family, and then alphabetically by genus and species. I find this arrangement to be especially helpful because it allows for quick look-up but still places plants in a family context to show genetic relationships.

Jones accepts all species for which herbarium records are known to him. Also included are those based on reliable literature references and a "to be expected" category. Sometimes this gets confusing. For instance, Jones cites the occurrence of the bristly clubmoss (*Lycopodium annotinum*) for Kentucky—using a report by Wagner

and Beitel (1993) in Vol. 2 of *Flora of North America*—then goes on to state that its current status is unclear but is to be expected in the state. Why is the status unclear? Did Jones not consider the report reliable, did he not find a specimen, or did he determine that the specimen was misidentified? Similarly, Jones states that a species of mermaidweed (*Proserpinaca pectinata*) is to be expected in Kentucky, but he fails to mention the report of it in the *Aquatic and Wetland Plants of Kentucky* by Beal and Thieret (1986). Specific critical analysis would have been helpful.

A very nice feature of the book is its illustrations. Almost all the species treated are illustrated with line drawings borrowed from the 1913 Britton and Brown *Illustrated Flora*. While several leave much to be desired—many are quite stylized—they are nonetheless valuable in species identification. Not all species are illustrated; just a few extra illustrations would round out the book and perhaps avoid some identification problems. For example, Jones offers an illustration of the blunt-lobed grapefern (*Botrychium oneidense*), an endangered species in Kentucky, but not one of the sparse-lobed grapefern (*B. bitematum*), a widespread species. The latter is similar in appearance to the blunt-lobed grapefern and difficult to distinguish from it (and from the common form of *B. dissectum*). While excellent keys are provided for identification of these (and all species) in the book, illustrations of both would have provided a much clearer depiction of the differences (and probably result in fewer false alarms about the discovery of the endangered species).

Species range within the state is given by physiographic region, namely the Mississippian Embayment, Interior

Low Plateaus, and Appalachian Plateaus. While this is good science, it's not always so useful in understanding the actual range of a species. For example, the Interior Low Plateaus make up a huge physiographic region, within Kentucky occurring northeast to Ohio, south to Tennessee, and westward to Illinois. Although Jones indicates "wide-spread" for some species within a region, he commonly omits any annotation for the uncommon or local ones, leaving this reader desiring more precise location information.

Following the heading of most plant families is a section entitled Family Notes. In most cases I found the information there of interest, but much of it is general in nature and can be found in other sources. I would have preferred more commentary on the species as they occur in Kentucky, such as detailed habitat information and species associates, collecting history, detailed range, etc. I especially thought the toxicological information could have been omitted to free up page space.

Despite its limitations, the book is one well worth owning, especially for those Hoosiers who live in and/or botanize in southern Indiana. Being a "plant hunter," I think one of the more useful aspects of the book is for generating a wish list of expected species that might occur in our state. Although the book doesn't have an atlas, it is nonetheless quite helpful in providing clues about species to look for. And even though it is a technical work, I would recommend it to any and all interested in developing a better understanding and appreciation of our wonderful plant life.

Mike Homoya is a botanist/ecologist with the Indiana DNR Division of Nature Preserves and author of *Orchids of Indiana* (IU Press, 1993).

A Trillium Odyssey

Hilary Cox
Leescapes Garden
Designs

Trilliums really only appeared on my radar screen when we moved to Indiana in 1989, and it was Bill Brink, a founding member of INPAWS, who introduced me to them.

Bill kept telling me about some woodland sites that were about to be developed and these plants needed rescuing. This was prior to INPAWS and rescue parties, and I regret now that I didn't take him up on his information, or I might have had a much more mature colony of trilliums than I do.

For those of you unfamiliar with trilliums, they are an unusual and, in some cases, rare plant in the lily family. Now given their own family, *Trilliaceae*, by some botanists, their name means "three lily." Trilliums are one of our more underrated spring-flowering woodland wildflowers and, because of their tolerance for dry

shade, are yet another plant to add to the gardener's shade garden palette. We have at least seven species in Indiana of which the most familiar are probably *Trillium sessile* (toadshade) and *Trillium grandiflorum* (large flowered or great white trillium). The genus is easy to identify by the fact that it has three of everything—three leaves, three petals, three sepals, and a three-part ovary—although they only have one flower per plant.

Some of the species are easy to identify, too, such as the aforementioned local toadshade with its deep red flowers and the great white trillium with its large white ones. But there are some, especially the naturally occurring hybrids, which can take a good deal of expertise to identify, as I was about to find out last April on a trillium odyssey in four states!

Rich and Dee Ann Peine and I had already had a trillium-rich journey en route to North Carolina, encountering our first *Trillium luteum* (yellow wakerobin) by a charming wayside creek in north central Kentucky. We had no trouble identifying it: It had the requisite "three of everything," was larger than our Indiana trilliums, and had pure yellow flowers, but the deciding factor was the lemon Pledge scent! This was our first experience of seeing trilliums in numbers...but by no means our last.



Aged tuliptrees in a carpet of trillium at Joyce Kilmer Memorial Forest. This is how all the North American forest used to look. Photo ©C. Colston Burrell.

By the time we met with Cole Burrell and Bruce Ellsworth in the Snowbird Lodge at the southwest tip of North Carolina, we had already taken a turn around the trail that leads up into, and through, the nearby Joyce Kilmer Memorial Forest. We had wandered along in this tiny piece of virgin forest in awe at the sheer size of the trees and in wonder at the carpets of wildflowers. The understory magnolias were incredible, alongside rhododendrons the size of small trees (this is how I think of them from my childhood in England—not the scrawny specimens we grow here in Indiana, if we're brave enough to even attempt them in our alkaline soil!). This was how all the North American forest used to look.

But this was no time for nostalgia. We were here looking for trilliums, and the first one we saw by the trailside was the coveted

Trillium undulatum or painted trillium, which is extremely site-specific, growing only in cool, acidic woodlands. We saw just two of this shy beauty, one in full flower, the other in bud, and we ooh-ed and aah-ed and took multiple pictures. Well, it is very pretty, too....

Elevation and soil conditions both have their impact on the various trillium species, and as we climbed higher we started seeing different ones, renewing our acquaintance with *Trillium luteum* and adding carpets of *Trillium grandiflorum* and scattered *Trillium erectum* to our list. The latter quickly became one of my favorites! With the sun shining low behind them, the alternating red petals and green sepals looked like a stained-glass window in miniature. Imagine several strewn through the undergrowth like shining jewels....



The author in hot pursuit of a closeup.
Photo by Dee Ann Peine.

The following morning we made a second pass through the forest, this time with Cole and Bruce as our plant and bird experts, respectively. We spent a lot more time looking at *all* the spring wildflowers including a carpet of *Panax trifolius* (dwarf ginseng), plus identifying spring migratory birds. I have to say that having your own live “pocket field guides” with you on such a hike beats books hollow! Cole is just phenomenal in the plant field (as is our own Kevin Tunesvick, who joined us on our later expeditions in Indiana); and Bruce is equally expert when it comes to birds and can identify every bird call, whether he can see the bird or not! I was in my own personal heaven the whole trip. Field guides just don't give you the same hands-on (or noses-on!) experience.

That afternoon we headed off to Tennessee to spend the night at the home of Rich Peine's brother. Our road led us through magnificent scenery in the Appalachians and Smokies, and we stopped frequently to marvel at the carpets of wildflowers along the roadside. On one bank we spent



Trillium luteum (yellow) side by side with a hybrid of *T. luteum* and *T. cuneatum*. Photo by Dee Ann Peine.



At Albright Grove we found showy orchid (*Galearis spectabilis*) along with tasty morels.
Photo by Dee Ann Peine.

quite a while sniffing the various trilliums and their intergrades—naturally occurring hybrids—to see which ones smelled the worst! These were not even stinking Benjamin, but *Trillium simile* (jeweled wakerobin) which, to quote Gene Bush, “is fragrant and is often confused with other forms and species as it readily crosses with *T. vaseyi* or *T. erectum* in the wild.” I’m certain other motorists passing by were wondering what these five crazy people were doing on their hands and knees at the side of the road, but we were having fun....

The following day we headed for Albright Grove, again stopping roadside to photograph and admire the wildflowers on the way. Albright doesn’t have the same rich woodland floor as Joyce Kilmer, although we saw our first orchids here (*Galearis spectabilis*). We also found morels, which the lady running the Bed and Breakfast in Milltown, Indiana, cooked for our breakfast the next day! Suffice it to say that Albright Grove’s trees more than made up for the lack of undergrowth. Think of the most awesome cathedral you have ever entered, imagine the sense of age and the deep peace which comes with it.... Well, these trees are a far cry above that and created, for me,

indescribable feelings. The only other people we met on this 10-mile hike were the rangers responsible for conserving the Grove, and I thanked them for the job they were doing.

The final leg of our trillium odyssey was to be in the woodlands surrounding Indianapolis. As I mentioned earlier, Kevin Tunesvick joined us here as leader of the pack, taking us first to Turkey Run State Park and then to the Big Walnut Nature Preserve, 2,967 acres of land protected by the Nature Conservancy and the DNR’s Division of Nature Preserves. We saw many *Trillium sessile* (toadshade), *T. grandiflorum* (large flowered) and *T. recurvatum* (bloody butcher) among a proliferation of other woodland herbs. However, after nearly a week of hiking in four states, up and down mountains, through various forests, on all kinds of trails somewhere between moderate and rough, I was tiring a little so skipped out on Big Walnut. I wanted to preserve my energies for our next and final day in north central Indiana, again accompanied by Kevin.

Up until now the weather had been unbelievably perfect: blue April skies, the right touch of warmth in the sun.... Now we needed the approaching

storms to hold off for just one more day!

Kevin took us to Yuhas Woods, a piece of forest that had just been acquired by the Redtail Conservancy Land Trust. They hadn’t really had the chance to assess the diversity and purity of the property, and we were in for an unexpected treat!

There were trilliums! Trilliums upon trilliums upon trilliums!! Cole was going crazy, trying to assess which pictures taken on our previous jaunts he could possibly do without to fit these in his digital camera. Toadshade, large flowered trilliums in carpets, more than we had seen even in North Carolina; and to top them all, *Trillium flexipes*, the nodding trillium. At first they were the typical white ones, scattered along the pathside, but soon we saw something different. We saw red ones among the white ones. These were *forma walpolei*, a unique color of smoky cerise. And then suddenly we were looking at something very unusual: Natural crossing had occurred, and the intergrades were...pink!

On our final day, right here in our own Indiana woodlands, we had the most trillium-rich experience of the whole excursion—and the threatened tornadoes held off until we made it home! Trilliums are now firmly established on my radar screen. I hope they will become more than a “blip” on yours too!

Visit Yuhas Woods yourself
on April 29 with Kevin
Tunesvick! See INPAWS
Programs, page 15.

2006 Plant Sale and Auction

*You don't have enough native plants in your garden!
You know you need more!*

*Why not satisfy your garden needs and help INPAWS at the same time?
Come to the INPAWS Plant Sale and Auction.*

This year's sale will be held **Saturday, May 13**, at the Indiana School for the Blind, 7725 N. College Avenue, in Indianapolis. The sale starts at 10:00 a.m. Saturday morning, and the auction at 11:00 a.m.

If you have never attended the sale before, you are missing out on a rare opportunity. It's a great way to get unusual native plants for your garden, and the auction is tremendous fun even if you don't buy anything. Available will be woodland and prairie plants, native grasses, trees and shrubs, and maybe a few aquatic plants. We will also have for sale a nice selection of books related to native plants and wildflowers.

Volunteers

Volunteers are needed to help with setup on Friday night, and with the sale itself on Saturday. Your skills can be used pricing plants for the sale, helping customers carry their purchases to their cars, and many other related tasks. Anyone interested in helping should contact either Melissa Moran (morandan@iquest.net) or Tom Hohman (hohmantr@aol.com).

Donations

All the plants in the sale are donated by members and businesses or have been obtained in an INPAWS plant rescue. **We need your plants.** The nice thing about many native plants is that they readily self-seed and spread in the garden. This means that you probably have extra plants that you don't need.

Plant donations can be brought to the School for the Blind on **Friday night from 5:00 to 8:00 p.m.** Signs will direct you to the location of the sale. Please pot any plants that you are going to donate several weeks prior to the sale. Doing so will enable them to better withstand the stress of transportation and the sale itself. Labeling of the plants prior to donation is a big help, especially if it is an uncommon plant.

Business Donors

A number of businesses support INPAWS by donating items for the sale. We appreciate and want to give particular recognition to those nurseries and other businesses whose donations have helped make previous sales such a huge success. Businesses who donated to the 2005 Plant Sale included:

- | | |
|------------------------------|------------------------|
| ▪ Allisonville Nursery | ▪ Wild Birds Unlimited |
| ▪ J. F. New Nursery | ▪ Munchkin Nursery |
| ▪ Mark M. Holeman, Inc. | ▪ Woody Warehouse |
| ▪ Spence Restoration Nursery | ▪ Altum's Nursery |

Whitewater Valley Grant Helps Secure Nature Preserve

In fall 2005, the INPAWS Board of Directors authorized an award of \$3,000 toward the purchase of Duning Woods by the Whitewater Valley Land Trust, Inc. As we went to press, news was received of the official closing on that property. —Ed.

Wayne County's Whitewater Valley has been the focus of major fundraising efforts to preserve a rare unspoiled natural area: the two-mile "corridor" linking the Cope Environmental Center to the east fork of the Whitewater River. Established in 2000, the Whitewater Valley Land Trust has targeted four properties: Neff Woods, Duning Woods, Bolling Woods, and Lick Creek Summit. All four sites are already approved to become Indiana DNR Dedicated State Nature Preserves.

Exceeding 315 acres together, these four heavily wooded tracts of steep "ravine forest" will provide a significant nucleus for a much larger preserved natural area. Neff Woods and adjoining Duning Woods (185 acres total) are located in Center Township. Earlham College's 40-acre Wildman Woods outdoor biology "lab," 6-acre

Ferrell Woods, and the 101-acre grounds of the Cope Environmental Center are nearby. The corridor also includes the beautiful Blue Clay Falls, one of only two exposed sources in the world for a certain type of fossil.

The southern third of Wayne County, especially its south-east portion, is notable for the rapid transition from Tipton Till Plain topography, which characterizes the terrain between Richmond and Indianapolis (and westward to Illinois), to Switzerland Hills topography, which extends from Richmond south to the Ohio River.

Securing these sites is a critically worth endeavor in its own right owing to their high quality, but together they establish a mutually reinforcing buffer for the core ravines, their flora and fauna. The Neff/Duning/Bolling/Lick Creek Summit complex will play a crucial role in the conservation of numerous species and provide great educational opportunities. Recreational hiking will be permitted to the extent deemed prudent and nonthreatening to that native remnant diversity; terrific hiking trails taking such concerns into consideration have already been established in Duning Woods and Lick Creek Summit.

Neff Woods and Duning Woods have great strategic value for future natural and scenic area preservation in their immediate vicinity, as virtually all large landowners in that 2-1/2 square mile block are absentee and, amazingly, are favorably disposed to their properties' preservation if someone else will take the lead.

Lick Creek Summit is joined to Neff, Bolling, and Duning Woods by the beautiful and charming Lick Creek and Hunt Road corridor, which is overarched with intertwined forest canopy as both road and stream follow within yards of each other for most of Hunt Road's length. Where Lick Creek swings away at right angles to Hunt Road, the road just there rises higher so that a refreshing view is presented of the series of random and irregular limestone "steps" in the creekbed with the usually crystal clear waters of Lick Creek splashing over them. These are the Blue Clay Falls, one of the most popular and surprisingly unspoiled natural area scenic views remaining in the upper Whitewater Valley, long known to the region's children "of every age" as a delightful place to go wading on a hot summer afternoon. Lick Creek flows year 'round; it originates in the runoff from and is also spring-fed from the Tipton Till Plan topography just to its north. The heavily wooded ravine forest through which it runs recharges



INVASIVES

New Program Certifies Forage and Mulch Free of Noxious Weed Seeds

A niche hay and straw market promises higher profits for Indiana growers if they can leave one ingredient out of each bale: invasive weeds.

The Indiana Noxious Weed Seed-Free Forage and Mulch Certification Program offers producers an opportunity to enter a market heretofore available only to growers in western states. Indiana is one of the first states east of the Mississippi with such a certification program. Developed in cooperation with Purdue University, the program is administered by the Indiana Crop Improvement Association (ICIA).

Demand for noxious weed seed-free hay and straw is growing, said Keith Johnson, Purdue Extension forage specialist. He has had calls from people who want to ride park trails and need forage that won't create horse manure with these noxious weeds. Interest also comes from contractors wanting weed-free straw for erosion control in highway construction.

For hay and straw to be certified "noxious weed seed-free," the pre-harvested crop—and areas where it will be stored—must not contain the seed of 67 invasive weeds. The noxious weed/undesirable plant list is a who's who of problematic vegetation, including Canada thistle, musk thistle, wild garlic, wild onion, cocklebur, johnsongrass, giant foxtail, buckhorn, pennycress, field pepperweed, and eastern black nightshade.

Certification inspections are conducted by ICIA personnel ten days before a crop is harvested. ICIA determines whether any noxious weeds have reached the flowering stage where seed maturation has occurred. If so, those fields or areas will not be certified.

To become a certified noxious weed seed-free producer, growers must pay a \$500 lifetime ICIA membership fee and nominal application and inspection fees. But the return on investment can be worth the added expense. Depending on the market, a noxious weed-free bale of straw might bring \$1-2 more per bale. Noxious weed-free hay sold by the national parks is said to bring twice the typical value of hay sold at Indiana markets.

For more information about this certification program, visit www.indianacrop.org/weedfreeprogram.htm or contact the ICIA toll-free at 866-899-2518 or icia@indianacrop.org.



The author poses with an aged white oak in Duning Woods.

it continuously. Where it leaves Duning Woods, its gravel bottom changes to limestone bedrock, creating its numerous multi-step falls as it bisects hills and ravine bottoms on its way to the Whitewater River three-quarter miles distant.

The Lick Creek Summit project, completed in August 2005, has focused renewed and appreciable attention to this beautiful Hoosier natural area. Acquisition of Bolling Woods added greater momentum, advancing further the distinct possibility of a very substantial "conservation block" in the no-so-distant future. Adding now Duning Woods and Neff Woods enhances and consolidates the public's enthusiasm for this "work in progress."

Longtime residents recall this entire area as "Lick Creek Hills," a monicker we long to reincarnate as describing an on-the-ground fact and a wonderful preserved natural remnant area. The generous grant from INPAWS has moved that dream a big step closer to reality, not just with those needed dollars but also with the encouragement it has given, and by demonstrating that the Lick Creek Hills are a Hoosier treasure, not just a Whitewater Valley or Wayne County special place.

For more about the Whitewater Valley Land Trust, Inc., visit www.whitewatervalleylandtrust.org.

Did You Renew?

Just a reminder that it's time to renew your INPAWS membership for 2006 if you have not already done so.

Check the mailing label on the cover of this issue to see the year through which your dues are paid. You may print a renewal form from the INPAWS website, www.inpaws.org, or contact Mark Outcalt, Membership Chair, at 317-257-3574 or maryhel@earthlink.net.

INPAWS membership is your continuing link to programs and people working to conserve and raise awareness of Indiana's exceptional native flora. Renew now and be part of the action.

Conservation on Your Mind?

Even if you don't hunt and fish, you can help Indiana qualify for matching federal conservation dollars by purchasing hunting and fishing licenses. Every little bit helps!

Purchase your license at www.in.gov/dnr/fishwild/licenses/buylic.htm.



Spring beauty (*Claytonia virginica*). In N.L. Britton and A. Brown. *Illustrated Flora of the Northern States and Canada*, 1913.

Call for Photos

INPAWS webmaster Marcia Moore is collecting photos of past INPAWS field trips and events for a web-based photo archive.

If you have photos you'd like to share with the membership, email them to mmoore@butler.edu or, if you have lots, send a CD or disk to Marcia at Friesner Herbarium, Butler University, 4600 Sunset Avenue, Indianapolis, IN 46208.

Wildflowers That Flourish Under Walnuts

While looking through an old gardening magazine, INPAWS West Central chapter president Chris Brewster came across an article about plants that can survive under black walnut trees despite the juglone produced by the trees. She sorted out the Indiana wildflowers from the list and here they are:

Bergamot, *Monarda fistulosa*
 Bloodroot, *Sanguinaria canadensis*
 Ginger, *Asarum canadense*
 Herb-Robert, *Geranium robertianum*
 Jacob's Ladder, *Polemonium reptans*
 Jerusalem Artichoke, *Helianthus tuberosus*
 Merrybells (Large-flowered Bellwort), *Uvularia grandiflora*
 Solomon's Seal, *Polygonatum commutatum*
 Spiderwort, *Tradescantia virginiana*
 Trillium, Large-flowered, *Trillium grandiflorum*
 Trillium, Nodding, *Trillium sororia*
 Violet, Canada, *Viola canadensis*
 Violet, Common blue, *Viola sororia*
 Virginia Waterleaf, *Hydrophyllum virginianum*

Help Promote INPAWS!

Even though INPAWS has existed for thirteen years, too many nature-oriented Indianans are still not familiar with our organization. One of the best ways to get the word out and attract new members is to participate in local nature- and gardening-related events.

In the past two months, your Education Committee set up INPAWS exhibits at the Governor's Conservation Conference at the Indiana Statehouse (February 20) and at the Indiana Flower and Patio Show (March 11-19).

Two more Indianapolis events coming up this month are:

Indiana Earth Day (April 22) in downtown Indianapolis

Orchard in Bloom (April 28-30) at Holliday Park

We need volunteers to staff our booth, tell folks about INPAWS, and supply information on invasives and native plant gardening using our handouts. You'll get free admission to these events, and the satisfaction of knowing that INPAWS will become a bit more familiar to concerned folks in our state.

To help out with one of these events—or set up an exhibit at a local event in your corner of Indiana—contact Dan or Sophia Anderson at 317-849-3105 or email danjand1@sbcglobal.net.

Another great way to promote INPAWS is to present a talk at your local library or garden club. Scripted slide shows on a variety of topics are ready for your use. Contact Julie Beihold at 317-852-8640 or iepdb@iquest.net.

Scratch That Writing Itch

INPAWS Journal welcomes your submissions. Deadline for the summer issue is May 23 for July 1 release. Direct questions or suggestions to the editor at wwford@comcast.net or 317-334-1932.



Rain gauge volunteers wanted. Purdue Agricultural Communication photo by Tom Campbell.

Every Drop Counts

The Community Collaborative Rain, Hail and Snow network is a unique, non-profit, community-based, high-density network of volunteers of all ages and backgrounds who take daily measurements of rain and snow in their backyards.

Thanks to a partnership between the Indiana State Climate Office and the National Weather Service-Indianapolis, CoCoRaHS is coming to Indiana!

With the great diversity of landscape and weather patterns in the state, accurate precipitation measurements are hard to achieve and forecast. CoCoRaHS will attempt to increase the number of collection points from 1-2 per county to 20-30.

With this detailed information, scientists and forecasters can provide more accurate information to all, especially those who depend on precipitation for their livelihood.

The network needs volunteers willing to spend a few minutes each day measuring and reporting precipitation.

Because reports must be as accurate as possible, local training sessions teach new observers how to install their instruments and accurately measure and record precipitation.

For more information or to volunteer, contact one of our Indiana CoCoRaHS coordinators:

Logan Johnson, National Weather Service, at logan.johnson@noaa.gov.

Bryn Takle, Indiana State Climate Office, at CoCoRaHS@purdue.edu.

Information is also available at these websites:

www.cocorahs.org
www.iclimate.org
www.crh.noaa.gov/ind

21st Annual Spring Wildflower Foray April 28-30

Monitoring habitat change over time sounds like serious business, but the Wildflower Foray makes it fun, as veterans of this wildflower count share their wisdom and experience and challenge fellow hikers to discover new species in bloom.

Hikes and programs take place in Brown and Monroe Counties, and some require preregistration.

To request a brochure, contact the T.C. Steele State Historic Site at 812-988-2785 or tcsteele@bloomington.in.us.

INPAWS PROGRAMS

April 15, 9 a.m. Work Day at Portland Arch

Led by Tom Swinford, Division of Nature Preserves, and Chad Bladow, The Nature Conservancy.

Come help create an entire savanna! Trees to plant and beautiful wildflowers to see in this Fountain County nature preserve in western Indiana. The future oak grove will expand habitat for rare and unusual plants of the area.

April 29, 9 a.m. Trilliums of Yuhas Woods

Led by Kevin Tunesvick, Spence Nursery

Hike through the trillium-rich forest Hilary Cox encountered at the end of her four-state odyssey (page 8). Located in Randolph County in east central Indiana, the site boasts a unique population of *Trillium flexipes*.

May 3, 1-3 p.m. Shooting Stars and More

Led by Jim Peterson, Manager, Clegg Garden

Hike Clegg Garden in West Lafayette with INPAWS' West Central Chapter. According to Kay Yatskievych, the best shooting star viewing in the state.

TBA Lupine and Paccoon in NW Indiana

Hike Prairie Border or Ober Savanna in late May or early June. Watch for announcement.

Watch your e-mail for details of these events. Contact Lynn Dennis, ldennis@tnc.org or 317-490-3010 for more information and directions, or visit www.inpaws.org.

No Poem as Lovely

Wendy Ford, Editor

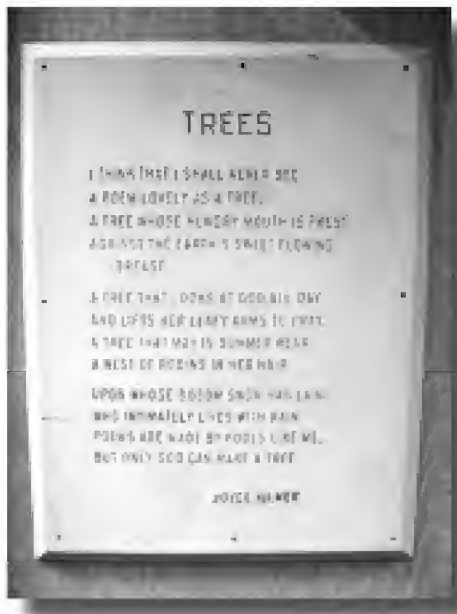
While Marion Jackson takes a well-deserved break from writing about his favorite trees—he's hard at work editing his biography, soon to be published by the Indiana Academy of Science—I'm putting in my own plug.

I got my start as a garden designer by circulating a flyer on my block of Graceland Avenue, offering free landscape plans to anyone who would let me use their lot as a learning lab.

I quickly discovered that I couldn't do justice to their landscapes with perennials alone. I had to learn annuals, bulbs, and shrubs—and I had to learn trees!

Twenty years later I'm still learning, with the help of Marion Jackson's regular column and many of the books that will be for sale at the 2006 INPAWS Plant Sale and Auction.

I'm excited about Hoosier Heartland's Plant-a-Million project, helping homeowners create new natural resources and habitats in their own backyards. By planting trees, they'll be enhancing their gardens and their quality of life at



Plaque at Joyce Kilmer Memorial Forest.
Photo by Dee Ann Peine.

the same time. Trees and shrubs form the canopy and understory that marry earth to sky and create shelter for the garden's human, furry, and feathered inhabitants. The "herbacious" plants are lovely in their time, but they need

the "woodies" to frame their display and hold the garden together in winter.

When we landscape with native trees, and watch them grow and transform from season to season, we deepen our connection to Indiana's rich natural heritage. As Hilary Cox's trillium odyssey reminds us, sometimes the best can be found right in our own backyard.

April 28 is Arbor Day, so let's hear it for our native trees! They strive steadfastly to shelter us, house our native and migrating birds, provide our forest floors with leaf mold, and so much more. And thanks, Marion Jackson, for teaching us to appreciate these majestic denizens of forest and field. We look forward to your next treatise on another "favorite."



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NO PLACE LIKE HOME

The Mini-Hike Solution

Bobbi Diehl

We all know the importance of keeping body and mind in good shape. I may not always practice what I preach, but there is one thing I can do that never fails to improve my spirits and my physical state: TAKE A HIKE!

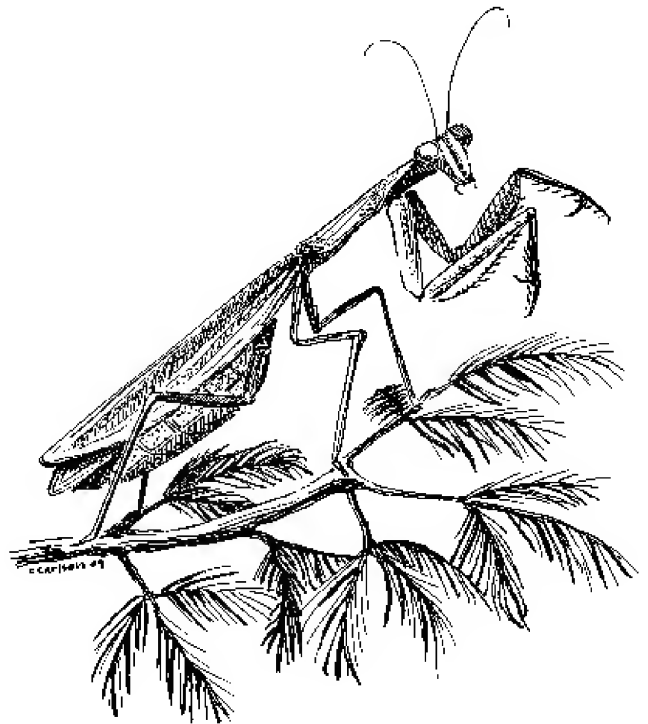
I used to think of a hike as something that required a lot of commitment and time. I would rally the troops, pack a lunch, assemble my gear—water, binoculars, field guides—don whatever clothing and footwear the weather dictated, then drive, sometimes quite a distance, to reach the desired site. Beautiful and worthwhile as it undoubtedly is, a traditional hike eats up most of your day, and who has the time for that on a regular basis? I sure didn't. After my retirement in 2002, what with various editing and writing projects I often worked harder than in the 9-to-5 days, and it was sedentary work. Hiking, like many other favorite activities, became a distant memory, something I looked forward to resuming SOMEDAY when I had a little more free time.

Then last fall I took the day off and drove up to Fishers to visit an old friend. One of my "smaller" editing projects at that time was *The Nature Conservancy's Field Guide to Indiana Preserves* (forthcoming in fall 2006 from Indiana University Press) and thanks to it I knew there was a nature preserve called Ritchey Woods in Fishers. My friend was familiar with it. After lunch at her house, we made the short drive to this 127-acre preserve, miraculously situated in the midst of

one of the fastest-growing communities in the United States, and spent an hour there.

Some claim big old trees possess magical auras or healing powers, and I certainly wouldn't argue. Wandering among the towering oaks and beeches was a tonic to my system. Thanks to that mini-hike, I literally felt rejuvenated. I vowed to find some similar natural areas in Bloomington where I could take a break and spend an hour or less exercising my out-of-shape body and refreshing my spirit.

My first discovery was Latimer Woods, a tiny enclave south of College Mall with a .38-mile trail looping among ancient trees. I had seen the sign outside the fenced-in preserve and always wondered where the entrance was. Thanks to our neighborhood association, I found out: From East Third Street, take Clarizz Boulevard south to The Woods at Latimer apartments. Turn in the entrance drive, take the left fork, and proceed to the rear of the complex. Park by the dumpster and walk the gravel drive to the trailhead on the right.



Praying mantis by Chris Carlson in R.A.

From inside the preserve, the cars rushing by and the Ayres store across the street seem strangely remote. To

Continued on page 7

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INDIANA NATIVE PLANT and Wildflower Society

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INPAWS JOURNAL is published quarterly for members of the Indiana Native Plant and Wildflower Society. Material may be reprinted with the permission of the editor.

All are invited to submit articles, news items, and event postings of interest to our membership. Acceptance for publication is at the discretion of the editor. INPAWS welcomes opposing viewpoints.

Please submit text and photos via e-mail to wwford@comcast.net or via land mail to INPAWS JOURNAL, 6911 Cabernet Way, Indianapolis IN 46278. Submission deadlines for specific issues are as follows:

Spring
February 23 for April 1 mailing

Summer
May 23 for July 1 mailing

Autumn
August 23 for October 1 mailing

Winter
November 23 for January 1 mailing

INPAWS Mission

To promote the appreciation, preservation, conservation, utilization and scientific study of the flora native to Indiana and to educate the public about the values, beauty, diversity, and environmental importance of indigenous vegetation.

Membership

INPAWS is a not-for-profit 501(c)(3) organization open to the public. For membership information, visit www.inpaws.org.

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Spheres of Influence

Karen Hartlep

What an incredible spring I've had—I hope you've also been able to enjoy the wonders of our native plants! I've seen the stunning shooting star display at Clegg Gardens in Lafayette and visited Yuhas Woods (twice!) to see the gorgeous and prolific trilliums (*Trillium sessile*, *T. grandiflorum*, and *T. flexipes*) and then the hyacinths a week later, thanks to the folks at the Red-Tail Conservancy and program chair Lynn Dennis. Coming up are more opportunities to visit unique sites throughout the state with INPAWS, and I hope you'll take advantage.

We've also just celebrated our best-ever Plant Sale and Auction. The May 13 event was a resounding success due to the stupendous efforts of first-year co-chairs Tom Hohman and Melissa Moran and their cadre of experienced volunteers. Thank you and congratulations to all for your plant donations and tireless efforts during the sale, and to our corporate sponsors for a wonderful array of donated items. Unfortunately for us, Melissa has accepted an exciting two-year job opportunity in Guatemala, so we are looking for another co-chair for next year. Please let me or Tom Hohman know if you're interested in this fun, fast-paced position.

I've been thinking about ways to increase and engage more of our membership. I'm proud that we're over 400 strong! But our mission is big enough to accommodate many more. I recall a marketing strategy session run years ago by my employer. Each person was asked to graphically depict his or her "spheres of influence." Most of us listed family, friends, co-workers, neighbors. Others were able to add clubs, charitable groups, other non-profits, and trade associations. When I think how limited our time is, even for our passionate interests, it seems that tapping our own spheres of influence would be a relatively painless way to "market" INPAWS membership and promote its goals.

Let me give you some examples. When neighbors walk by my yard as I'm gardening, I'm happy to give them a mini-tour and explain what's going on with the "mess" and why. Invited to a neighborhood plant exchange, I brought native plants and explained why. Though basically an introvert, I've even ventured to offer my opinions to waffling, confused strangers at nurseries! (Perhaps they were just being polite, but they seemed grateful.) So even if you don't have time to give a talk or to work the INPAWS booth at a gardening or conservation event, there are lots of ways you can promote our mission and perhaps even draw a new member or two.

I challenge each of you to bring in one new member this year, and then engage that member by bringing them to one of our hikes or lectures, or to the INPAWS Annual Conference. I hope to see even more of you at a field trip or INPAWS event in the near future....

Karen



Standing cypress (*Ipomopsis rubra*).
©Dorothy A. Riddle, 1999.

Orchidaceae = Orchid Family

Rebecca Dolan, PhD
Friesner Herbarium, Butler University

Worldwide, the orchids are one of the largest families, with 735 genera and 17,000 species. Indiana has 18 genera and 42 species.

Characteristics

Herbaceous perennials, terrestrial in Indiana. Leaves 2-ranked. Flowers often showy and colorful, but sometimes small or inconspicuous, with parts in 3's, irregular. Petals, 2 lateral and one modified into a lip. Great range of floral scents with specialist pollinators. Pollen grains clustered into waxy sacs (pollinia). Seeds tiny (1- to 2-celled embryo) and produced by the millions, often need fungal mycorrhizae to germinate.

Economic Importance

Cultivated orchids for floral arrangements and corsages. Vanilla, from fermented and cured fruit.

Some Indiana Orchids

Aplectrum hyemale—Puttyroot orchid

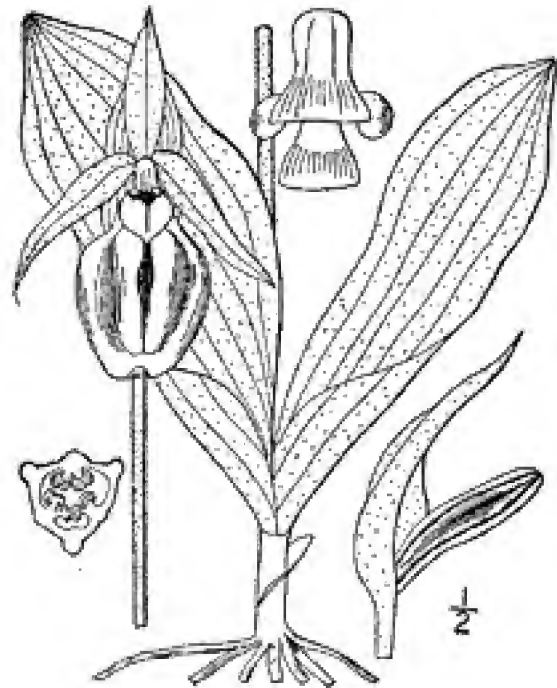
*Cypripedium*s—Lady's slippers or moccasin flowers

Spiranthes—Ladies-tresses

Platanthera—Fringed and fringeless orchids

It is often said that more orchids are native to Indiana than to Hawaii. Our orchids live rooted in the ground and tend to have smaller flowers than tropical orchids, but they are just as beautiful. A few bloom before or after leaves are present and look like parasitic plants, with pinkish inflorescences. Orchids are known for having periods of dormancy that can last for several years, during which they do not appear above ground.

The best source of information on Indiana's orchids is Mike Homoya's wonderful book, *Orchids of Indiana*, published in 1993 by the Indiana Academy of Science (ISBN 9-253-32864-0). Recently, the South Central chapter listserv has seen a lot of e-mail chatter on where to see orchids blooming in the Brown County area.



Puttyroot orchid.



Moccasin flower.

USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. Illustrated flora of the northern states and Canada. Vol. 1: 550.

Plum-Purple Prose?

Barbara E. Plampin, PhD
Shirley Heinze Land Trust

Plant detectives do stop to smell the roses. Near me, black oak savanna slopes surround two bowls, the smaller open with lupine (*Lupinus perennis occidentalis*) and butterfly weed (*Asclepias tuberosa*), the larger more diverse with a mosaic of flat black oak savanna, small mesic prairies, swales, wooded ecotones, and grassy buttonbush (*Cephalanthus occidentalis*) marshes interrupted by numerous sandy spits.

As the seasons unfold, plant performers include sand cress (*Arabis lyrata*) and bird's foot violet (*Viola pedata lineariloba*), Quaker ladies (*Houstonia caerulea*) and yellow star grass (*Hypoxis hirsuta*), prairie (wood) lily (*Lilium philadelphicum*), wild white indigo (*Baptisia leucantha*), blue-eyed grass (*Sisyrinchium angustifolium*), goat's rue (*Tephrosia virginiana*), large-leaved shin leaf (*Pyrola elliptica*), marsh blazing star (*Liatris spicata*), clammy false foxglove (*Aureolaria pedicularia ambigens*), meadow beauty (*Rhexia virginica*), showy goldenrod (*Solidago speciosa*) and hundreds more. The show doesn't conclude with late fall soapwort gentians (*Gentiana saponaria*) because Michigan holly (*Ilex verticillata*) berries persist into winter.

Real drama occurs on sunny, mid-May days when the sand spit edges erupt with long, sometimes hundred-foot lines of royal, a.k.a. painted fern (*Osmunda regalis*). Fern fans know that a panicle of fertile pinnae tops the frond. That eighteenth-century French seed peddler's picture of a frond culminating in blue, yellow-centered flowers lied (a practice not unknown in our enlightened times). As the fronds can reach five feet, the royal part is true. (*Osmunda* supposedly derives from Osmunder, the Anglo-Saxon name for the god Thor.)

"Painted?" Complex patterns of unfurling fronds stretch into the distance like multi-colored wave crests, challenging the artist. That drift is pea green, this one red plum, another burnt orange, another bronze, yet another grey-green. Maybe this one's mahogany? Back-lit by spring sun, the translucent fronds seem almost afire. When passing clouds give the colors a matte finish, the artist must reach again for the paintbox. Just what are those colors, anyway?

Up close, each frond varies still more. Most colors aren't solid, rachis and stipes tending to red green (some say pink) diffusing into the contrasting hue of the frond. Fortunately, royal fern can be enjoyed in many Indiana counties; it also grows well in gardens.

Note: This article depicts the Indiana Dunes National Lakeshore's Lupine Prairie. Through open to the public, it's hard enough to reach that people living outside the Dunes should call 219-926-7561 for directions. The picture of the blue-flowered royal fern used to hang in the office of Noel B. Pavlovic, Lake Michigan Ecological Research Station, U.S.G.S., Porter, Indiana.

Some Books

Deam, C.C. 1984. Flora of Indiana. Hirschberg, Germany: J. Cramer. Reprint of 1940 edition.

Lellinger, D.B. 1985. A Field Manual of the Ferns and Fern-Allies of the United States and Canada. Washington, D.C.: Smithsonian Institution Press.

Swink, F. & G. Wilhelm. 1994. Plants of the Chicago Region. Fourth Edition. Indianapolis: Indiana Academy of Science.



Royal fern (*Osmunda regalis*). Photo by Missouri Botanic Garden.

An Alternative Dogwood

Marion T. Jackson, PhD
Professor Emeritus of Ecology
Indiana State University

Cornus alternifolia L.

When dogwood is mentioned almost everyone thinks of the showy flowering dogwood, *Cornus florida*, with its dazzling white bracted flowers in April and its beautiful leaves and scarlet fruits in October. But the rarer species, *Cornus alternifolia*, the only member of the genus to have alternately arranged leaves, can be equally distinctive.



The tiered effect of *C. alternifolia* is the source of one of its many common names, pagoda dogwood. Photo courtesy of Nebraska Statewide Arboretum.

Ten species of dogwoods have been reported for Indiana, but only *C. florida* and *C. alternifolia* reach small tree size here. The remainder are shrubs. Deam, in his *Trees of Indiana* (1940), listed the largest flowering dogwood tree that he had seen in Indiana at 40 inches circumference, with a clear bole of 10 feet. A number of dogwood trees in the 6-inch size class (4-8 inches diameter), have been measured in my forest inventories over the years, with a maximum of 10.6 inches dbh encountered in Ripley County. Alternate-leaved dogwoods only rarely reach tree size, but specimens of 6-8 inches dbh, and 20-30 feet in total height, are on record.

Both tree-sized dogwoods have heavy, close-grained wood, with flowering dogwood at 49.9 pounds per cubic foot, second only to osage-orange in wood density among Indiana trees. *Cornus alternifolia* wood is considerably lighter at 41.7 pounds per cubic foot. Neither tree is large enough for commercial use today, but flowering dogwood was once favored for thread spools, weaving shuttles, golf club heads, pulley sheaves, tool handles, and turnery. The generic name *Cornus*, meaning horn, refers to the hard, smooth nature of the wood.

Alternate-leaved dogwood is also known as pagoda dogwood (from the progressively shorter tiers of its branches), blue dogwood (from its deep blue fruits), green osier dogwood (from its bright green branches early, to dark green, then red, with flecked lenticels, later), and pigeon berry (presumably from the use of the fruits by passenger pigeons for food in pioneer days).



Indigo berries follow delicate creamy flowers. Photo by Paul Wray, Iowa State University, www.forestryimages.org.

Found in a range of habitats from rich, moist calcareous upland woods, to springy slopes, to swamp-margins, pagoda dogwood derives much of its charm from its relative rarity, but its ornamental qualities commend it as well: a somewhat Oriental (pagoda) growth form; ethereal delicate cream-colored flowers; pointed leaves with impressed, candelabra veins; bright green branches early on; and indigo berries on red branchlets in autumn.

Although fairly widespread in Indiana, except for the prairie margin and southwestern counties, you do not “plan to find” alternate-leaved dogwood on a given field outing. Instead, you “happen to encounter it,” often when you least expect it to be there. Attractive in all seasons, once you discover it, those locations are etched into your long-term memory, much as are the sightings of rare birds, or those of wild predatory mammals.

As an example, when hiking a woodland trail earlier this May during the Byron Fellowship Retreat at the Fellowship of Christian Athletes Conference Center in Parke County, there at the base of a large plashy waterfall were two lovely pagoda dogwoods in new leaf, and with sparkling

corymbs of four-parted, creamy flowers gleaming in the spring sunlight, appropriately accenting the beauty of the freshet!

Alternate-leaved dogwood is becoming a more popular ornamental, and rightfully so. It graces any lawn, grounds, or park in all seasons. A yellow-fruited variety (*f. ochrocarpa* Rehd.) enjoys wider usage than the typical blue-fruited form, but either is equally handsome in the proper landscape setting. One problem in ornamental use is its lack of availability from many nurseries.

Search as I might, I was unable to learn why the genus *Cornus* has the common name of “dogwood.” Perhaps it is because “you can tell the trees by their bark”—bad pun intended! But I did discover that powdered dogwood bark was sometimes used as a dentifrice by the pioneers, and also as a quinine substitute for treating malaria.

Mini-Hikes, continued from page 1

the south and west is a buffer zone of old fields bordered by more busy streets.

Attractive signs along the circular nature trail tell the history of the Latimers’ farm and their beloved woods, which they donated to the city when most of their acreage was sold to become College Mall. It boasts some huge, old tulip poplars, cherries, and other trees. A creek runs through the lower (northern) edge, and I’ve seen a pileated woodpecker perched high in the treetops. The pawpaw trees were in bloom in late April. Spicebushes were blooming in early March. A visit to Latimer in early winter is good too. *Euonymus* unfortunately infests the preserve, and if you go, please feel free to remove some.

Winslow Woods Park, 2120 S. Highland Avenue, is another good venue for a mini-hike. The park entrance on the west side of the street is just before the entrance to Bloomington’s YMCA, on the east side, if you’re driving north. I learned about this one from a brief reference in the local newspaper. It is a gorgeous preserve with mature old trees and some sinkholes. The .74-mile trail is well maintained. On a late April trip, we saw many prairie trillium and dwarf larkspurs in bloom, as well as puttyroot orchids not blooming yet. This park also has a slight *euonymus* problem. We disposed of a goodly amount of it, uprooting it easily from the moist soil and placing it in a waste can next to the parking lot.

City of Bloomington Parks and Recreation maintains these little gems and a number of others. There are also some private preserves in town. I’ll be checking these out for a possible future article whenever I can spare an hour or so. Wherever you are, in whatever corner of Indiana, why not consider doing the same and letting us know about your finds?

Christmas Carols and Baseball Bats

Dan Shaver
The Nature Conservancy

Certain songs and familiar sounds stir our deepest emotions. The opening line from Nat King Cole's "The Christmas Song" is one such phrase. "Chestnuts roasting on an open fire" evokes warmth, comfort, and safety even though most of us have never seen an American chestnut tree or roasted chestnuts.

The American chestnut tree (*Castanea dentata*) was once pervasive in the great eastern forest, from Maine to Florida and from North Carolina to Western Tennessee. In Indiana, the American chestnut followed sandstone-based soils up from the Ohio River into the Brown County Hills area. Native wildlife, from passenger pigeons to black bears, feasted on the abundant crop of nutritious chestnuts. Before 1900, people depended on the tree for nuts, livestock forage, tannin, and just about every imaginable wood product. The wood of American chestnut is straight-grained, light, easily worked, and as rot resistant as redwood.

In a period of only 40 years, this majestic tree was wiped out across its entire range by the chestnut blight (*Cryphonectria parasitica*). The fungus entered the United States on Asian nursery stock imported to New York around 1900. It spread by wind, rain, birds, and other animals, including people. Once it entered American chestnut trees through cracks in the bark, the fungus quickly killed them, typically within one growing season. By 1940 the American chestnut was devastated. A few American chestnuts and stump sprouts from trees killed 60–80 years ago still persist in the understory of some eastern forests, but for our generation, roasting chestnuts on an open fire is nothing but a comforting phrase.

Another exhilarating sound is the "crack" of a baseball against a wooden bat. This sound is familiar even to people who could care less about baseball. The most popular wood for making baseball bats is white ash (*Fraxinus americana*). White ash is light, durable, and strong—qualities that are important not only for baseball bats, but for internal furniture parts, cabinets, clothes pins, and a multitude of other wood products.

Right now, all ash species are facing the same fate as the American chestnut. A wood-boring beetle from Asia, the

Emerald Ash Borer (EAB) (*Agrilus planipennis*) came into the US about 10 years ago on solid wood packing material. Since that time it has spread across Michigan, Canada, Ohio, and Indiana. The EAB appears to kill all members of the ash family, since none of our native ashes have any built-in resistance. Worse still, many of the beetles' predators, parasites, and diseases that keep EAB populations low in Asia are not present in North America. Recent

efforts to remove and destroy all ash trees in a one-half mile radius around known infestations have proven ineffective. There are still efforts to quarantine areas to slow the spread of the beetle, but over time the dusty purple shades of ash trees in fall may disappear from the Indiana landscape.

This doesn't mean we must give up hope for ash trees or the American chestnut. Efforts are underway to collect ash tree genetic material, establish seed banks, and develop EAB-resistant ash seedlings for the future.

Researchers continue to search for pesticides that may help protect some of the native ash trees. When the chestnut blight ripped across the eastern US, the technology was not available to capture genetic material or seed bank samples. However, The American Chestnut Foundation has been working diligently for the past twenty-one years to breed a blight-resistant American chestnut. Within the next few years, a highly blight-resistant American chestnut will be available to plant. It will be fifteen-sixteenths American chestnut and one-sixteenth Chinese chestnut. The tree will have the form, grandeur, and mast production of an American chestnut with the blight-resistance of a Chinese chestnut.

Hopefully, in time, American chestnut will grace Indiana's hillsides with showy white blossoms in spring and abundant mast for wildlife. With luck, ash trees will never completely disappear from Indiana. But what species is next? We all need to do our part to control the spread of invasive species. The songs and sounds of our history depend on it.

Note: This article appeared in the Spring 2006 issue of *The Woodland Steward*, a free quarterly publication promoting the wise use of forest resources, circulated to about 35,000 woodland owners in Indiana. For more about woodland conservation, visit www.inwoodlands.org.



A RARE FIND

Short's Goldenrod Identified in Blue River Watershed

Indiana has approximately twenty-five native species of goldenrod, ranging from the extremely common tall goldenrod to the rare stout-ragged goldenrod. None is as rare, though, as one discovered in southern Indiana in the summer of 2001.

In a cooperative project with The Nature Conservancy, ecologists with the Indiana Department of Natural Resources Division of Nature Preserves had been conducting a botanical and natural area inventory within the watershed of the Blue River in Harrison, Crawford, and Washington counties.

That August, DNR's Michael Homoya, Brian Abrell, and Amy Akin were surveying areas bordering the Blue River within Harrison-Crawford State Forest and encountered a species of goldenrod that looked strangely familiar—familiar, because six years earlier Homoya and Abrell had seen the goldenrod when they participated in an effort to re-establish Short's goldenrod (*Solidago shortii*) at the Falls of the Ohio State Park. The seven clumps planted at the Falls died within a year because of flooding, but the ecologists retained the memory of their appearance.

Their first reaction upon seeing the familiar goldenrod at the new site was cautious elation sprinkled with a dose of disbelief. A careful inspection of the plants, and the realization that the habitat resembled that of the pre-flood Falls, clinched the case that they had found one of the rarest plants on the globe. The new Indiana site harbored one of only two known living wild populations on earth!

Short's goldenrod (*Solidago shortii*) is named after its discoverer, Dr. Charles Short of Louisville. He found it in 1840 growing on a limestone outcrop in Kentucky known as Rock Island, located within the Falls of the Ohio (River) between Clarksville, Indiana, and Louisville.

Short's goldenrod was last collected from Rock Island in 1860, although it might still have been there until the island was greatly altered by the construction of locks and dams at the Falls in the early 1900s. It was considered extinct until the pre-eminent ecologist E. Lucy Braun found a population in 1939 in the Blue Lick Springs area of eastern Kentucky.

The two locations in Kentucky known to harbor Short's goldenrod were connected prior to 1800 by a buffalo trace, and it has been speculated that bison transported goldenrod seed from one locality to the other. Interestingly, the same buffalo trace extended into Indiana and crossed the Blue River. Short's goldenrod is a federally listed endangered species, one of only two plant species with such status occurring in Indiana.



One of only two known living wild populations of *Solidago shortii* on earth. Photo by Mike Homoya, courtesy of IDNR.

The Faster to Master

A Primer on Recent Nomenclatural Changes in Indiana Asters

Note: George Yatskievych originally wrote this article about the Missouri asters. It appeared in *Missouriensis*, the journal of the Missouri Native Plant Society. At INPAWS' request, Kay Yatskievych adapted the article for the Indiana asters.

Modern plant systematists are botanical genealogists. Their work is often expressed as cladistic phylogenies (cladograms), which are branched diagrams that detail the relationships among taxonomic groups as lineages derived from hypothetical ancestors. The concept of a "natural" taxonomic group has come to mean a hypothesis that two or more taxa directly share a common ancestry. The tools used to develop these phylogenies are broad and often involve some combination of data from morphological, anatomical, cytological, phytochemical, and molecular studies.

Phylogenetic systematists tend to operate under a set of basic assumptions that may not be intuitive to those outside the field. The technical term for a phylogenetically "natural group" is "monophyletic," which means that a given lineage is discrete and ultimately can be traced back to a single originating branchpoint. A taxonomic group (such as a genus) that can be shown to have been derived directly as a specialized portion within some other lineage renders that lineage "paraphyletic" and should be reclass-

sified as a subgroup of that lineage (or the whole thing should be split up into a series of discrete monophyletic groups). Taxonomic groups that include members of two or more distantly related lineages are categorized as "polyphyletic" and are not tolerated.

In large taxonomic groups like the Asteraceae, the basic units (tribes, genera, and species) may be more

or less recognizable morphologically based upon one or several unusual features. The relationships between these basic units has been a major focus of many recent systematic studies, and the number of tribes, genera, and species accepted in a classification often has been modified



Aster undulatus. USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. Illustrated flora of the northern states and Canada. Vol. 3: 416.

from traditional limits because new data have defined novel monophyletic groups.

In the Asteraceae, the recent trend is to split many of the larger traditional genera into series of smaller genera. This usually has come about because phylogenetic studies have resulted in a different understanding of the relationships between groups of closely related species. In many

the Aster Disaster...

George & Kay Yatskievych
Missouri Botanical Garden

cases in a given tribe, some species within Genus A may be more closely related to some species within Genus B than to other species within Genus A. For the larger genera having broad distributions on several continents, these relationships may not be evident if only the species in a regional flora are studied, but can become clearer when the entire genus across its whole provenance is analyzed for patterns of variation. Thus, in recent years, traditional genera of Asteraceae, such as *Cacalia*, *Senecio*, *Eupatorium*, *Gnaphalium*, *Solidago*, and *Aster*, have been dismembered by systematists into smaller putatively monophyletic units.

Perhaps none of these genera has received more taxonomic attention than *Aster*. When Deam's *Flora of Indiana* (1940) was published, most botanists considered it a taxonomically difficult genus of nearly 450 species distributed widely in temperate and montane regions of the world. Today, the situation is quite different, with all but one of the ca. 180 species remaining in the genus native to Europe and Asia. In the *Flora of North America* region, the native circumboreal *A. alpinus* L. (alpine aster) occurs from Alaska southward through the Rocky Mountains to Wyoming (and also in far northern Europe and Asia), and the non-native *A. tataricus* L. f. (Tatarian aster, a Eurasian native) escapes sporadically from cultivation in gardens.

The changes in generic delimitation of *Aster* have been developing for a long time. In the early 1970s, Bernard Boivin (1971–1972) of the University of Laval (Canada) was the first to recognize that the white upland aster (*A. ptarmicoides*) was

more closely related to the species of the *Oligoneuron* group of goldenrods (*Solidago*) than to the other species of *Aster*. In the late 1970s, John Semple at the University of Waterloo (Canada) and his colleagues began developing new cytological and morphological data to support a narrower circumscription of the genus (see Semple et al. [2002] for a review). The revised classification began to stabilize with the thorough taxonomic and phylogenetic analysis of the group throughout its range by Guy Nesom (1994), then at the University of Texas–Austin. More recent analyses by Nesom (reviewed in Nesom [2000]) and Semple (reviewed in Semple et al. [2002]) have continued to support the hypothesis of a narrower generic concept of *Aster*. Ongoing molecular phylogenetic research (Noyes and Rieseberg 1999; Semple et al. 2002) also has supported this general reclassification of the *Aster* group while fine-tuning the numbers and limits of the various smaller genera.

It is beyond the scope of this article to detail the research supporting the current classification of the tribe Astereae. It is sufficient to note that Nesom (1994) and Noyes and Rieseberg (1999), using independent data sets, arrived at the conclusion that there was a basic phylogenetic branch toward the base of the group's evolutionary tree between Old World and New World lineages. As the generic name *Aster* originally was described based on Eurasian plants, if the New World group represents a different lineage it can no longer be classified under the name *Aster*. Within the New World lineage of Asteraceae tribe Astereae subtribe Asterinae, Nesom (1994) and later authors have arrived at a classification

that includes about fourteen currently accepted genera, a few of which are still controversial in their circumscription. The justifications for maintaining each of these genera are discussed in Nesom's (2000) excellent review of the North and Central American genera of the tribe Astereae. These nomenclatural revisions are reflected in the three recently published volumes of the Asteraceae in the *Flora of North America* series (see book announcement on page 12).

For Indiana, the practical consequence of this generic revision is that the native species that earlier went by the name of *Aster* are distributed among six genera. The largest of these (and the largest segregate in North America) is *Symphyotrichum*, which includes the most species of Indiana asters. The other genera accommodate asters that were separated toward the beginning of the keys to species determination in all of the floristic literature used by students of the state's flora until the present time. Thus, learning the new system will not be a difficult chore for most Indiana botanists once they accept the sad fact of the dismemberment of a genus that traditionally has been readily recognizable in the field and herbarium.

The revised nomenclature of the Indiana asters is listed on pages 12–13. Genus and species names are shown in bold type, with synonyms italicized and indented below.

It should be noted that four species have been reported as new to the state since Deam's (1940) flora was published. A few of the species are listed under different species epithets than in the older literature,

following more recent species-level taxonomic investigations by asterologists. Synonymy in the list is mostly restricted to the names used by Deam (1940) and K. Yatskievych (2000). References to these publications and the taxon number assigned to them follow the synonyms. Intraspecific classification within the accepted species is beyond the scope of the present article and is omitted except where necessary to make the synonymy clear. Within *Solidago*, only the single species and hybrid that were previously reported as *Aster* are listed.

Special Price

on Newly Released Asteraceae References

The three volumes of the Asteraceae in the **Flora of North America** series are now in print, and a special publication price is in effect until August 31.

Each of the volumes is priced at \$76.00 (\$95.00 after August). To take advantage of this offer, visit www.FNA.org and click on Purchase the Volumes in the list under The Flora.

The Asteraceae are the largest family in the **Flora of North America** area and the only one that will require three volumes. The family includes 2,413 species in 418 genera.

These volumes bring the total number published to twelve. Plans are to publish three volumes per year over the next six years, which will finish the thirty-volume series in 2011.

Current Nomenclatural Status of the Indiana Asters

Aster L. —Ca. 180 species; North America (1 native taxon), Europe, Asia.

Aster tataricus L.f. (Tatarian aster). [New record, collected by Steve Dunbar, 4 Oct 2001].

Doellingeria Nees —3 species; U.S., Canada.

Doellingeria umbellata (Mill.) Nees (Flat-topped white aster).

Aster umbellatus Mill. [Deam 1940:2063; K. Yatskievych 2000:1280]

Eurybia (Cass.) S.F. Gray —Ca. 28 species; U.S., Canada, Europe, Asia.

Eurybia furcata (E.S. Burgess) G.L. Nesom (Forked aster)

Aster furcatus E.S. Burgess [Deam 1940:2034; K. Yatskievych 2000:1283]

Eurybia macrophylla (L.) Cass. (Big-leaved aster).

Aster macrophyllus L. [Deam 1940:2033, plus 3 unnumbered vars.; K. Yatskievych 2000:1285]

Eurybia schreberi (Nees) Nees (Schreber's aster)

Aster schreberi Nees [Homoya 1995; K. Yatskievych 2000:1284]

Ionactis Greene —Ca. 5 species; U.S., Canada.

Ionactis linariifolius (L.) Greene (Stiff-leaved aster, Flax-leaved aster)

Aster linariifolius L. [Deam 1940:2056; K. Yatskievych 2000:1276]

Sericocarpus Nees—5 species; U.S., Canada.

Sericocarpus linifolius (L.) B.S.P. (Narrow-leaved aster) [Deam 1940:2076]

Aster solidagineus Michx. [K. Yatskievych 2000:1282]

Solidago L. —About 100 species; North America, South America, Europe, Asia.

Solidago ×bernardii Boivin (*S. ptarmicoides* × *S. riddellii*) [K. Yatskievych 2000:1234]

Aster ×lutescens (Lindl.) Torrey & A. Gray, misapplied [Swink and Wilhelm 1994]

Solidago ptarmicoides (Torr. & A. Gray) B. Boivin (Prairie goldenrod) [K.

Yatskievych 2000:1234]

Aster ptarmicoides Torr. & A. Gray [Deam 1940:2064]

Symphotrichum Nees —Ca. 90 species; North America to South America.

Symphotrichum ×amethystinum (Nutt.) G.L. Nesom (*S. ericoides* × *S. novae-angliae*) [Deam 1940, excluded no. 625]

Aster ×amethystinus Nutt. [K. Yatskievych 2000:1278, 1287]

Symphotrichum boreale (Torr. & Gray) Å. Löve & D. Löve (Rushlike American-aster)

Aster junceus Aiton [Deam 1940:2052]

Aster borealis (Torr. & A. Gray) Prov. [K. Yatskievych 2000:1281]

Symphotrichum ciliatum (Ledeb.) G.L. Nesom (Rayless American-aster)

Aster angustus (Lindl.) T. & G. [Deam 1940: excluded no. 626]

Aster brachyactis S.F. Blake [K. Yatskievych 2000:1295]

Symphotrichum cordifolium (L.) G.L. Nesom (Blue heart-leaved American-aster)

Aster cordifolius L. [Deam 1940:2037; K. Yatskievych 2000:1303]

Aster lowrieanus T.C. Porter [Deam 1940, excluded no. 630]

Aster sagittifolius Wedem. ex Willd. [Deam 1940:2038]

Symphotrichum drummondii (Lindl. ex Hook.) G.L. Nesom (Drummond's American-aster)

Aster drummondii Lindl. ex Hook. [Deam 1940:2040; K. Yatskievych 2000:1304]

Symphotrichum dumosum (L.) G.L. Nesom (Rice-button American-aster)

Aster dumosus L. [Deam 1940:2067; K. Yatskievych 2000:1292]

Symphotrichum ericoides (L.) G.L. Nesom (Heath-leaved American-aster)

Aster ericoides L. [Deam 1940:2059; K. Yatskievych 2000:1287]

Aster exiguus (Fernald) Rydb. [Deam 1940:2058]

Symphotrichum firmum (Nees) G.L. Nesom (Glossy-leaved American-aster)

Aster lucidulus (A. Gray.) Wiegand [Deam 1940:2045, plus 1 unnumbered form]

Aster puniceus L. var. *firmus* (Nees) Torr. & A. Gray [K. Yatskievych 2000:1296]

Symphiotrichum laeve (L.) Á. Löve & D. Löve (Smooth American-aster)
Aster laevis L. [Deam 1940:2047, plus 1 unnumbered var.; K. Yatskievych 2000:1297]

Symphiotrichum lanceolatum (Willd.) G.L. Nesom (Panicked American-aster)
Aster interior Wieg. [Deam 1940:2055]
Aster paniculatus Lam. [Deam 1940:2053, 2054]
Aster lanceolatus Willd. [K. Yatskievych 2000:1293]

Symphiotrichum lateriflorum (L.) Á. Löve & D. Löve (Calico American-aster)
Aster lateriflorus (L.) Britton [Deam 1940:2065 and 2066, excluded no. 629, 635, and 636; K. Yatskievych 2000:1289]

Symphiotrichum novae-angliae (L.) G.L. Nesom (New England American-aster)
Aster novae-angliae L. [Deam 1940:2042, plus 1 unnumbered form; K. Yatskievych 2000:1278]

Symphiotrichum oblongifolium (Nutt.) G.L. Nesom (Aromatic American-aster)
Aster oblongifolius Nutt. [Deam 1940:2044, 2045; K. Yatskievych 2000:1279]

Symphiotrichum ontarionis (Wiegand) G.L. Nesom (Ontario American-aster)
Aster missouriensis Britton [Deam 1940: 2062, plus 1 unnumbered var.]
Aster ontarionis Wiegand [K. Yatskievych 2000:1288]

Symphiotrichum oolentangiense (Riddell) G.L. Nesom (Sky-blue American-aster, Azure American-aster)
Aster azureus Lindl. ex Hook. [Deam 1940:2035]
Aster oolentangiensis Riddell [K. Yatskievych 2000:1301]

Symphiotrichum patens (Aiton) G.L. Nesom (Spreading American-aster)
Aster patens Aiton [Deam 1940:2043; K. Yatskievych 2000:1299]

Symphiotrichum phlogifolium (Muhl. ex Willd.) G.L. Nesom (Phlox-leaved American-aster)
Aster patens var. *phlogifolius* Nees [Deam et al. 1947; K. Yatskievych 2000:1299]

Symphiotrichum pilosum (Willd.) G.L. Nesom (Hairy American-aster)
Aster pilosus Willd. [Deam 1940:2061, plus 3 unnumbered vars. and 1 unnumbered form; K. Yatskievych 2000:1286]
Aster polyphyllus Willd. [Deam 1940, excluded no. 633]

Symphiotrichum praealtum (Poir.) G.L. Nesom (Willow-leaved American-aster)
Aster praealtus Poir. [Deam 1940:2050, 2051, plus 1 unnumbered var.; K. Yatskievych 2000: 1291]

Symphiotrichum prenanthoides (Muhl. ex Willd.) G.L. Nesom (Zigzag American-aster)
Aster prenanthoides Muhl. [Deam 1940:2046; K. Yatskievych 2000:1298]

Symphiotrichum puniceum (L.) Á. Löve & D. Löve (Purple-stemmed American-aster)
Aster puniceus L. [Deam 1940:2057, plus 2 unnumbered vars.; K. Yatskievych 2000:1296]
Aster longifolius Lam. [Deam 1940:2048]

Symphiotrichum racemosum (Elliott) G.L. Nesom (Small white American-aster)
A. vimineus Lam., misapplied [Deam 1940:2068, plus 1 unnumbered var. and excluded no. 638]
Aster fragilis Willd. [K. Yatskievych 2000:1290]

Symphiotrichum sericeum (Vent.) G.L. Nesom (Silky American-aster)
Aster sericeus Vent. [Deam 1940:2060; K. Yatskievych 2000:1277]

Symphiotrichum shortii (Lindl. ex Hooker) G.L. Nesom (Short's American-aster)
Aster shortii Lindl. [Deam 1940:2036; K. Yatskievych 2000:1300]

Symphiotrichum subulatum (Michx.) G.L. Nesom (Expressway American-aster)
Aster subulatus Michx. [Swink and Wilhelm 1994; K. Yatskievych 2000:1294]

Symphiotrichum undulatum (L.) G.L. Nesom (Wavy-leaved American-aster)
Aster undulatus L. [Deam 1940:2041; K. Yatskievych 2000:1302]

Symphiotrichum urophyllum (Lindl. ex DC.) G.L. Nesom (Arrow-leaved American-aster)
Aster sagittifolius Wedem. ex Willd., misapplied [Deam 1940:2039]
Aster urophyllum Lindl. ex DC. [K. Yatskievych 2000:1305]

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Semple, J. C., S. B. Heard, and L. Brouillet. 2002. Cultivated and native asters of Ontario (Compositae: Astereae): *Aster* L. (including *Asteromoea* Blume, *Diplactis* Raf. and *Kalimeris* (Cass.), *Callistephus* Cass., *Galatella* Cass., *Doelleringia* Nees, *Oclemena* E.L. Greene, *Eurybia* (Cass.) S.F. Gray, *Canadanthus* Nesom, and *Symphiotrichum* Nees (including *Virgulus* Raf.). *Univ. Waterloo Biol. Ser.* 41: i–viii, 1–135.

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Symphiotrichum amethystinum.
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INPAWS Plant Sale & Auction a Huge Success

Which is better for a plant sale—sunny weather to draw people outside, or rainy weather so they can't work in their gardens? The answer eluded us on May 13, but rain certainly didn't dampen spirits for the 2006 INPAWS Plant Sale & Auction.

A great supply of plants and a large crowd led to a very successful sale. As usual, INPAWS volunteers brought plants dug from their gardens and from plant rescues, and nurseries and landscape contractors donated native plants, shrubs, and trees. Although revenue figures are not yet final, the sale appears to have broken all previous records for the annual event.

New this year was the inclusion of a book sale, with books devoted to wildflowers, gardening, and general nature topics. Another new wrinkle which undoubtedly added to the success was the ability to accept credit cards. Both of these initiatives were made possible by the generous help of The Game Preserve and INPAWS member Kit Newkirk.

If anyone ever doubted the importance of INPAWS volunteers to the success of the sale, one merely had to view the Saturday preparations for the 10:00 am sale. The sale room appeared to be in good shape by 9:00, but the appearance of two large nursery donations plus the arrival of additional rescue plants brought the room into apparent chaos. However, a closer look showed the volunteers busily making order of the chaos, and by 9:20 the room was again ready for the start of the sale.

With the large supply of donated plants, the bigger space that the Indiana School for the Blind offered was greatly appreciated. The biggest problem appeared to be a shortage of parking spaces, leading some customers to park at the side of the roads

and requiring sale volunteers to direct traffic to outlying parking areas. As far as problems go, this was a pleasant one to have.

One of the most impressive aspects of the plant sale was the volunteerism and hard work by so many INPAWS members and friends. The work to transplant and pot the more than 1,400 donated plants alone was amazing. Calculating that each plant takes 5 to 10 minutes to dig up and pot, this means that somewhere between 120 and 240 volunteer hours were invested before the plants even arrived at the sale! Not to mention the many hands-on-deck during the sale to assist shoppers, conduct the auction, and help with checkout. A great and dedicated team helped with setup and clean-up this year; we would have been there for quite some time were it not for the commitment of so many.

Many thanks to those who donated plants and volunteered their time, enthusiasm, and knowledge of Indiana's native plants to make the sale a success. It was truly amazing to see the many-faceted skills of INPAWS members at work!

—Tom Hohman and Melissa Moran
Co-chairs, 2006 Plant Sale & Auction

Plant Sale Volunteers and Donors

Sophia & Dan Anderson, Cheryl & Andy Andrews, Julie Beihold, Brenda Bodkin, Chris Brewer, Linda Bullard, Laura Corry, Hilary Cox, Lynn Dennis, Kevin Dogan, Joe Eberts, Wendy Ford, Diane Green, Janice Gustafiero, Marian Harcourt, Virginia Harmon, Karen Hartlep, Mary Holland, Ruth Ann Ingraham, Ron Jackson, Cheryl Jensen, Mike Kelley, Kim Krull, Rolland Kontak, Jackie Luzar, Bill Malcolm, Marian McKittrick, Donovan Miller, Marty Miller, Dan Moran, Sue Nord Peiffer, Mark Outcalt, George

Peregrim, Amy Perry, Susan Pratt, Betty Randall, David & Jane Savage, Margaret Smith, Laura & Arne Snipes, Deb Snyder, Rosie Springer, Charles & Mary Spurgeon, Jean Stallcop, Dawn & Michael Stelts, Dianne Stippler, Doris & Bob Thomas, Kevin Tunesvick, Mona Visnius, Betsy & George Wilson, and Susan Zellers.

If we have omitted anyone from this list, please accept our apology and let us know.



Participating Nurseries and Landscape Contractors

Allisonville Nursery & Landscaping,
Fishers

Altum's Horticultural Center
& Gardens, Zionsville

Becker Landscape Contractors,
Indianapolis

Beineke's Nursery, West Lafayette

Edge of the Prairie Wildflowers,
Crawfordsville

Hobbs Nursery, Indianapolis

J.F. New & Associates, Walkerton

Mark M. Holeman, Indianapolis

Munchkin Nursery & Garden, Depauw

Native Plants Unlimited, Fishers

Spence Restoration Nursery, Muncie

Wild Birds Unlimited, Indianapolis

Woody Warehouse, Lizton

INPAWS Annual Conference Set for November 4

Mark your calendars for this year's INPAWS Annual Conference on Saturday, November 4, 2006, in the scenic Bradford Woods conference facility in south central Indiana.

Scott Russell Sanders is this year's keynote speaker. Scott Russell Sanders is a Distinguished Professor of English at Indiana University and author of twenty books in addition to a book co-authored with Rich Clark, titled "Wild and Scenic Indiana," a natural history pictorial guide of the state. Sanders' work is concerned with people's place in nature and the practice of community. "The longer you stay in a place out of wholehearted desire, the more likely you are to learn about its human and natural history, to help preserve what's worthy, restore what's damaged and create what's lacking," wrote Sanders in an essay for the winter 2005-06 Notre Dame Magazine. The title for Sanders's talk for the conference is "Wild and Scenic Southern Indiana."

Concurrent sessions will focus on the natural history of southern Indiana and landscaping with native plants. Speakers include Marion Jackson on shrubs, Mike Homoya on orchids, Alice Heikens on barren plant communities, Kriste Lindberg on karst geology, Carolyn Harstad on animal-resistant landscaping, and Lynn Jenkins on planting for wildlife. Dawn and Dave Bauman will also offer a plant rescue certification course.

Registration and additional information on the conference will be published in the autumn INPAWS Journal and on the INPAWS website www.inpaws.org. Bradford Woods is located on State Road 67 between Martinsville and Mooresville. A map will be included with registration information.

Plant ID Workshops

The Institute of Botanical Training, LLC, provides comprehensive professional plant identification workshops for biologists, environmental consultants, foresters, naturalists, and anyone interested in learning to identify plants. The workshops—on such topics as wetland flora; grasses, rushes, and sedges; prairie flora; tree identification; and monitoring of rare, threatened, and endangered species—are held over several days in different cities around the Midwest. For a schedule and fees, visit www.botanicaltraining.com.

In Search of Mini-Hikes

Following Bobbi Diehl's lead, *INPAWS Journal* seeks your reports on those postage-stamp native areas embedded in cities and suburbs in your own locale.

If you discover a worthy mini-hike site, tell us when you visited the area, how you accessed it, and what you saw and heard. In the interest of encouraging more mini-hikes to refresh body and soul, we will compile a directory of such sites and publish member reports in future issues.

The deadline for the fall issue is August 23 (see submission instructions on page 2).

INPAWS EXCURSIONS

Watch for announcements of these INPAWS field trips in the mail, via email, and at www.inpaws.org.

July

Tour of Indiana State Museum prairie led by Dan Anderson.

September

Exploration of two savanna restoration sites, one that has not begun and one that is pretty far along, to show what people can do to preserve natural areas in Indiana.

November

Tamarack hike in northeast Indiana led by Lee Casebere.

WEDNESDAYS in the WILD

Walks co-sponsored by West Central Chapter of INPAWS

July 12 1:00–3:00 p.m.

Butterflies of Celery Bog, Lilly Nature Center, West Lafayette.

July 19 1:45–5:00 p.m.

Prairie walk at Jasper-Pulaski Tefft Savanna.

July 26 1:00–3:00 p.m.

Recreated prairie at Lilly Tippecanoe Labs.

August 9 1:00–3:00 p.m.

Wildflowers of Spinn Prairie.

August 23 1:00–3:00 p.m.

Restored prairie of NICHES' Weiler-Leopold Nature Reserve.

August 30 1:00–3:00 p.m.

Willow identification at Martell Forest and Purdue Wildlife Area.

For more information and directions to program locations, visit the regional chapter listing at www.inpaws.org.

Winning Proposals Selected

The Small Grants & Awards Committee received ten proposals and selected three to receive a total of \$1,130 in awards. Congratulations to our award recipients. Next year's submission deadline will be moved ahead to February 1, 2007. Watch for proposal guidelines in the fall issue of *INPAWS Journal* or visit www.inpaws.org.

"Flying Flowers" Educational Garden

Proposal by David Welch and Lisa Weisner, Sycamore Land Trust. Awarded \$500 to purchase native seed mix from Spence Nursery to seed a half-acre at Touch the Earth Preserve in Bartholomew County.

Committee comments: Your project is excellent—very well thought out with a plan for first removing the invasive fescue, for future maintenance, and for the addition of plugs to this initial seed planting. It will not only add to the native plant biodiversity of SLT's Touch the Earth Preserve, but it will also provide students and other visitors with an opportunity to learn about Indiana's natural history and the use of native plants in the landscape.

With half of this area to be planted in a visible powerline right-of-way along a road, your native plant landscaping and the butterflies it will attract will hopefully entice others to follow your example. Because you will be putting up "Do Not Spray" signs and the property will be monitored by its stewards who live just across the road from the planting, the committee is assured that your planting will be protected from road crew damage.

Native Landscaping at Three Public Libraries

Proposal by Gus Nyberg, Friends of Sands. Awarded \$200 for mulch, potting soil, and hard-to-germinate or slow growing native plants such as *Tephrosia*, *Amorpha*, *Aster*, and *Asclepias* to landscape the Roselawn, LakeVillage, and Morocco Libraries in Newton County.

Committee comments: This is a wonderful project—it brings native plant gardens to three different public spaces, giving them good visibility in the community.

Your volunteer group has already [shown] a lot of ingenuity in the use of placemats in local restaurants to inform people of the natural areas of Kankakee Sands and Willough Slough.

We commend your group for the time and effort it has already put into the current project in seed collection and preparation, and for its frugality and conservation ethic in reusing plant pots and seed trays from previous projects!

Demonstration Rain Garden

Proposal by Nina Evans, Indianapolis Zoo. Awarded \$430 for native plants, rocks, and compost to create a rain garden at the southeast corner of the Dog 'n' Suds dining plaza at the Indianapolis Zoo in Marion County.

Committee comments: What a great project—creating a rain garden by redirecting rainwater from a restaurant downspout into the garden instead of into the storm sewer—and one with good visibility in a location where it will be a permanent, maintained feature providing educational value for years to come!

The educational component of this project is an important one—introducing the concept of rain gardens to the public, not only for their beauty but also for their contribution to cleaner water by helping to recharge the groundwater and reduce run-off pollution!

The committee is pleased that you will be removing the invasive non-native ground cover *Vinca minor*. As you are probably aware, it is very important that you get rid of all of the vinca before planting because otherwise the rhizomes will resprout through your new plants! So you may have to remove the top three inches of soil to ensure that you have no remaining rhizomes.



INDIANA NATIVE PLANT
and Wildflower Society

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A YEAR OF...

Blissful Botanizing

Hilary Cox
Leescapes Garden
Designs

I feel so lucky!

Whether in Arizona or Wisconsin, Virginia or Indiana, I had always gone with family and friends when looking for plants in their natural habitats. But family and friends just didn't tolerate stopping every five seconds to try to identify yet another inconspicuous plant of no interest to anyone, and they certainly didn't want to lug along a pile of dusty old botany tomes. So I left my books at home, and for the longest time all I did was look, maybe take a photograph or two, and hope to get enough time somewhen in my life to identify what I had seen. I harbored a dream, though, that one day I would be able to take all my books with me, sit in the middle of the "great wide open" and botanize to my heart's content.

I never dreamed I would find someone equally impassioned who would want to accompany me.

Dee Ann Peine had spent several years in solitary "botanizing" around the family farm in Morgan County and the family home near Eagle Creek reservoir in Marion County, and our trillium odyssey together last year proved to be the beginning of a plant-hunting companionship

that continues to grow. After our wonderful experiences in North Carolina/Tennessee/Kentucky/Indiana that spring, it seemed only natural to join forces in our continued search for plants both familiar and unknown.

We started "down at the farm" by borrowing step-son Doug's Rhino. This jeep-like conveyance allowed us to take *all* our books plus our picnic

lunch with us, and we could get to more places on the property in one day than if we were walking. We were accompanied only by the dogs, who are always willing to excuse our aberrant behavior as long as they are allowed to be there. We have named this "luxury botanizing"! From our privileged position we could trundle along

Continued on page 4



Passiflora lutea. Photo by Dee Ann Peine.

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INDIANA NATIVE PLANT and Wildflower Society

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All are invited to submit articles, news items, and event postings of interest to our membership. Acceptance for publication is at the discretion of the editor. INPAWS welcomes opposing viewpoints.

Please submit text and photos via e-mail to wwford@comcast.net or via land mail to INPAWS JOURNAL, 6911 Cabernet Way, Indianapolis IN 46278. Submission deadlines for specific issues are as follows:

Spring
February 23 for April 1 mailing

Summer
May 23 for July 1 mailing

Autumn
August 23 for October 1 mailing

Winter
November 23 for January 1 mailing

INPAWS Mission

To promote the appreciation, preservation, conservation, utilization and scientific study of the flora native to Indiana and to educate the public about the values, beauty, diversity, and environmental importance of indigenous vegetation.

Membership

INPAWS is a not-for-profit 501(c)(3) organization open to the public. For membership information, visit www.inpaws.org.

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Take a [Mini-]Hike!

PRESIDENT'S MESSAGE

Karen Hartlep

A Closer Look

Greetings Native Plant Enthusiasts!

I hope you've all had an enlightening, invigorating, refreshing summer and are looking forward to a slower pace as we ease into fall. I've learned a lot this summer, partly because for the first time in 20+ years(!) I got out my 16x hand lens from my Dendrology class at Purdue. It's absolutely amazing how much there is to look at and try to understand!

While thinking about all I miss on a daily basis because of not really looking deeply at things, I sent the following quote from Louis Agassiz to a friend: "I spent the summer traveling. I got halfway across my backyard." He thought it was a joke! But I actually have spent the summer "traveling" in my yard.

Lens in hand, I have seen paw paw flowers, persimmon flowers, buds breaking that I hadn't seen before, crazy insects I can't identify, and a plant I am now in love with strictly on the basis of its stem color—it's blue-stemmed goldenrod, with absolutely stunning glaucous periwinkle-to-eggplant purple stems, holding close a contrasting beadwork of bright yellow flowers. I had this plant in my garden for about five years but only glanced at the flowers—until now.

There are so many more undiscovered treasures just waiting for me to notice and appreciate more fully. I hope you've experienced the same joy.

Speaking of treasures! We're looking forward to a great Annual Meeting on November 4th in beautiful southern Indiana. Ellen Jacquart and Gillian Harris have done a remarkable job planning, procuring, organizing, and even obsessing a little over this event along with their team from the South Central Chapter. I hope to see you there. (I'll be the one with the hand lens around my neck!)

Here's to taking a closer look and enjoying the tiny things in life.

Karen

Bobbi Diehl

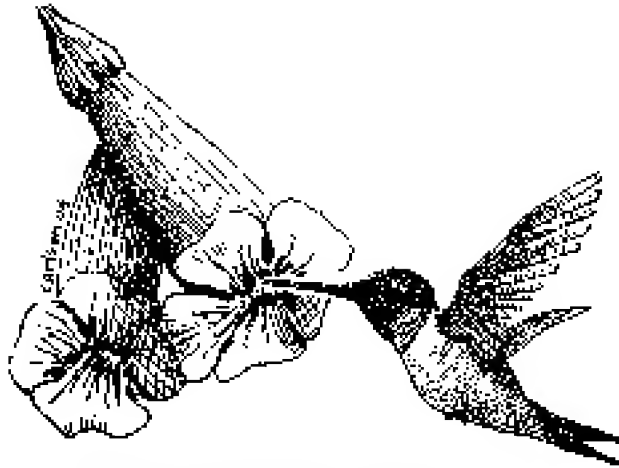
In the last issue of INPAWS Journal, Bobbi Diehl extolled the virtues of mini-hikes to keep body and mind in good shape. As promised, here are more Bloomington mini-hike opportunities. The first two are on private land. The second two are City of Bloomington parks.

Griffy Woods

In 2001, the 185-acre Griffy Woods, along the south shore of Griffy Lake, was established as part of the Indiana University Research and Teaching Preserve. It is not to be confused with the city's extensive system of trails on the north side of the lake. Three newer trails lead to University Lake, and I hope to check

them out one day. But the original Griffy Woods site consists of five trails passing through beautiful wooded terrain. The trails feature steep dropoffs, creeks, ravines, rock formations, and of course wonderful trees, ferns, and other vegetation, including the delightful partridgeberry in one spot. Interpretive signs tell about the sights along the way.

The Loop Trail makes for a pleasant and easy 0.3-mile hike. Or start off on the rugged Ravine Trail with its steps and hand rails, and proceed to what was once an old railroad track. Here the easier 0.6-mile Weir Trail begins, following a rushing stream and then looping back to the road. For a more ambitious hike, again take the Ravine Trail from the road to where it intersects with the 1.2-mile Overlook Trail, which follows several ridges before coming back to the Ravine Trail. Standing atop one ridge, you can enjoy a lake view and a breeze—welcome on a hot day.



Drawing by Chris Carlson in Ruth Ann Ingraham, *Swimming with Frogs*.

Continued on page 9

Blissful Botanizing

continued from page 1



Putty root (*Aplectrum hyemale*) inhabits moist, deciduous woods. Photo by Hilary Cox.

as slowly as we liked, looking for plants we didn't recognize, stopping to identify them, and taking as long as it took. What bliss! Nobody chomping at the bit to keep on moving, no verbal prods to suggest this was boring, and food available when we needed it. Unlike cats, the dogs were not intent on getting into the precise spaces we were focusing on and most often had their own business to go about anyway, so we had relatively few plants damaged by our enthusiastic tail-wagging companions.

At first Dee Ann introduced me to all the woodland plants with which she is more familiar than I, such as the native orchids, for which she has an uncanny eye. If any of you have gone looking for shy woodland beauties such as puttyroot (*Aplectrum hyemale*), late coral-root (*Corallorhiza odontorhiza*), rattlesnake plantain (*Goodyera pubescens*), crane-fly orchid (*Tipularia discolor*), or nodding pogonia (*Triphora trianthophora*), you will know that it is like looking for a needle in a haystack. Even on unfam-

iliar ground, Dee Ann can spot them while I am still looking at all the other dead twigs around me but missing the orchid itself. I am getting better at it though.

Most of the other woodland plants were easier to find, and we seemed to get along just fine identifying them all, including the ferns and some more unusual plants such as whorled stonecrop (*Sedum ternatum*) and wild chervil (*Chaerophyllum procumbens*). (For those of you who are interested, "Fern Finder" by Anne and Barbara Hollowell is a simple and invaluable dichotomous key pocket guide.)

The one thing we made a determined decision not to even attempt to identify were the fungi in the woods, beautiful as they are! I sincerely think

the woods hold more fungal forms of life than any other creatures (except perhaps the insects), and we could have spent the rest of our lives lost to the world!!

Next we started identifying the plants in the "meadow," where Joe Pye and beebalm, goldenrod and spiderwort abound, and those plants that grow around the edges of the woods such as scutellaria and lobelia, aster and campanula; plus the occasional ladies' tresses (*Spiranthes*) and all kinds of other goodies you would expect in those habitats. Oh yes, we did also decide not to investigate the world of sedges too closely yet; that may take a few years. As for grasses, well, we'd stick with the familiar warm-season and easily recognizable woodland species for now.



Above: Indiana's native *Sedum ternatum*. Below: Sassy, also an Indiana native. Photos by Dee Ann Peine.



For a year these sites satisfied us. Then we began to get greedy and wanted to expand our horizons. It started (this is our excuse, and we're sticking to it!) with our trip to Munchkin Nursery to pick up plants for the INPAWS sale and auction. Having spent a pleasant few hours with Gene Bush in his garden and duly filled the car with plants, off we set on an adventure.



Cross-vine (*Bignonia capreolata*), a denizen of the Ohio River Valley. Photo by Hilary Cox.

We ended up on River Road, down by the Ohio River, dawdling along the (mostly) dirt road and stopping if we saw something unusual. And we did. At first it was swathes of firepinks (*Silene virginica*) growing through groves of garlic mustard. Then it was a tropical-looking flower clinging to a vine at the wood's edge which had us backing up, nearly front-ending the only other vehicle on the road, which just happened to be traveling too closely behind us! Neither of us had ever seen this plant. It was too early for trumpet creeper and anyway the flower color was wrong! We took photographs but were unable to identify the flower until later. Called cross-vine (*Bignonia capreolata*), it is listed in Deam's as occurring along the Ohio River Valley...exactly where we were! Now we are hoping that we can persuade Kevin Tungesvick at Spence Nursery to grow this plant on for us, or for me (at least!) to use in my "natural landscaping."

Next we went to a property near Indianapolis International Airport where earlier Dee Ann had conducted an INPAWS plant rescue. She wanted to check out some of the plants she had seen then. Although we didn't find

the specific plants she was seeking, we did see two plants new to us: one we had looked for earlier in the year, our native prairie crabapple, *Malus ioensis*, and one we had never seen before, although one of my clients had planted one this spring, the hop tree, *Ptelea trifoliata*. It is always a thrill to see a plant for the first time in its natural habitat, even if it is a fairly common one. We also dug a plant out of the tarmac that neither of us could name, although we both knew we knew it, and took it home to see what the flower was like when it opened...it turned out to be bouncing bet (*Saponaria officinalis*), a common roadside weed which had, in this case, decided to travel *through* the road, not on it! We were glad we had stopped it in its tracks!

In between these jaunts, I gave two tours of Burnett Woods State Nature Preserve, a near-pristine deciduous forest near Avon in Hendricks County, when it was in full bloom (mid-April); and Dee Ann and I re-visited Yuhass Woods with Kevin Tungesvick and INPAWS.

With all of this, wouldn't you think we had had enough botanizing to last a lifetime? It's not as if we both

don't lead very full lives outside this new hobby—I still run my business, which actually benefits from my new perspective as my plant knowledge grows; Dee Ann works and runs a family and does most of the documentary work on our plant lists, sorting pictures, recording where seen, what time of year, stage of growth, etc.; and both of us also spend an inordinate amount of time on the PLANTS Database (<http://plants.usda.gov/>) and with our field guides, trying to identify the plants we couldn't in the field.

Enough botanizing? The answer was a resounding NO!! And as it turned out, our most exciting find was yet to come.

Hearing of our adventures in the wild through Dee Ann's husband Rich Peine, a mutual friend, Andy Roller, told us of an ex-hayfield on his sister's farm near Elizabethtown in Kentucky which, left unmowed for seven or eight years, had turned into...a treasure trove in the making!

The "rest of the story" to follow....

Watch for more Blissful Botanizing in the next issue of *INPAWS Journal*.

Cyperaceae = Sedge Family

Rebecca Dolan, PhD
Friesner Herbarium, Butler University

Worldwide, the sedge family has about 100 genera and 5000 species. Indiana has about 16 genera and 180 species.

Characteristics

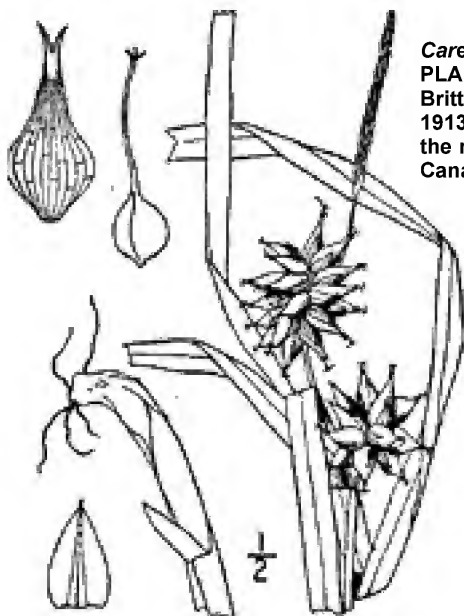
Monocots. Perennial or annual herbs, often of damp places. Stems often triangular ("sedges have edges"), solid, 3-ranked. Leaves grass-like, clustered at the base. Inflorescence composed of one to many small spikes of flowers. Flowers subtended by a single bract, inflorescence subtended by one or more bracts. Calyx and corolla bristly or scaly (or lacking!). Unique-looking flowers encased in perigynia in the genus *Carex*. Wind-pollinated.

Economic Importance

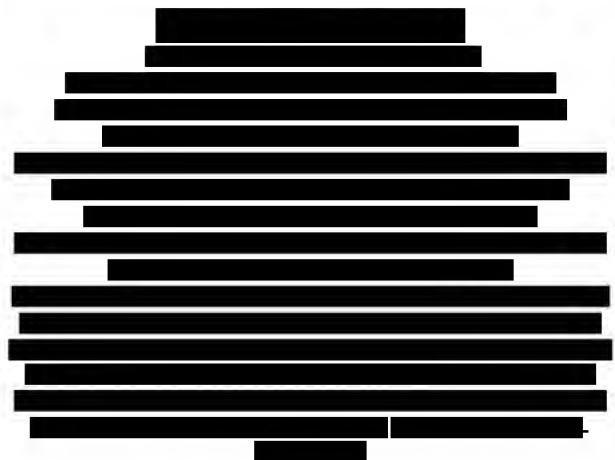
Egyptians made paper from *Cyperus papyrus*. Some sedges, such as yellow nut-grass, are nasty weeds in farm fields and gardens. Some are used for weaving baskets. Chinese water chestnuts are edible tubers of a member of this family. Sedge family members are also commonly used as pond ornamentals. The needle spikerush (*Eleocharis aciculais*) is used as an aquarium plant.

My favorite sedge is *Carex grayi*, Gray's sedge. Not only is it easy to identify, its inflorescences look like medieval maces. It grows in damp woods.

Dr. Paul Rothrock of Taylor University in Upland has a wonderful web site to help with identification of non-*Carex* sedges. It can be found at www.taylor.edu/academics/acadDepts/ees/sedges/.



Carex grayi. USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. Illustrated flora of the northern states and Canada. Vol. 1: 439.



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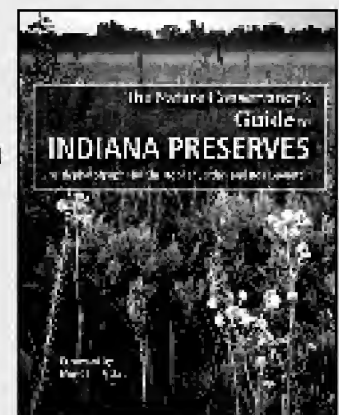
The Nature Conservancy's Guide to Indiana Preserves

With photographs by
Christopher Jordan
and Ron Leonetti

Foreword by
Marion T. Jackson

From the majestic domes of northwest Indiana to the lush cypress sloughs at the convergence of the Ohio and Wabash Rivers—and all places in between—Indiana boasts a remarkable variety of natural areas. This collaborative photographic masterpiece will take you to the Cedar Bluffs, the Kankakee Sands Project, Pennywort Cliff, among other wonders. Directions to each site are also included, so you can start your journey now.

paper \$27.95



Not Your Ordinary Flower

Dan McDowell

Even when plant lovers are in areas they perceive as unpromising, they often still feel compelled, whether from force of habit or unconscious optimism, to keep looking for...anything! Until the outing is done and over, there is always hope of finding something.

I was in this situation this past July on a privately owned tract in northwest Lake County. I'm walking through a small nondescript flatwoods of young swamp white oak, sassafras, and wild cherry. The closed canopy is not showing much, only an occasional bracken fern, tick trefoil, or an old Solomon's seal. Continuously scanning the ground, I really don't know what I'm expecting to find. Suddenly, something noticeably different stands out. I have come upon a small population of pinesap (*Monotropa hypopithys*). This pleasant, unexpected discovery is enough to make me botanically happy for the next few minutes, despite the heat and mosquitoes.

Many of us are probably more familiar with the pinesap's better known and more often seen close relative, the ghostly Indian pipe (*Monotropa uniflora*). They share many of the same characteristics—non-photosynthetic, saprophytic, and a preference for similar habitats. Pinesap occurs throughout most of the United States but, depending on the area, is considered as an uncommon to rare plant. It is on the watch list in Indiana.

Pinesap is not your ordinary flower. This herbaceous perennial is a saprophyte that takes its nourishment from decaying organic matter such as leaf mold. It prefers acid soils and subdued light situations. Some research sources discuss its dependent associations with fungi and mycorrhiza. Since pinesap doesn't photosynthesize, it lacks chlorophyll, and the colors of stems and flowers can vary from light yellow to orange to shades of red. Most plant guides list a June-to-October blooming period. Plants blooming in summer are yellow; those in the fall are orange or occasionally red.

In a four-foot area I count seventeen stems, most as singles or pairs, and one group of four. They are 2.5 to 4.5 inches tall; stems and flowers are light yellow in color, and waxy in appearance. The nodding aspect of the inflorescence looks like a compact cluster but it is actually a raceme. Most plants have five to ten half-inch long tubular flowers composed of four or five petals. Lower stem flowers have four petals; terminal flowers have five. The stems have several small pointed scale-type leaves.

When I make a follow-up visit ten days later, the flowers show marked changes. The stems have become more



Pinesap (*Monotropa hypopithys*) flower. Photo ©2001 by Eleanor Saulys.

upright, making the plants another inch or more taller. The flower clusters are losing their compact appearance and now reveal spacing along the stems. Individual flowers are also becoming more open, some even looking bell-like, showing their stamens. Overall coloration is starting to change, and the tiny leaf bracts are turning black. Before long, the rest of the plant will turn completely black.

This is the fourth site where I have seen pinesap over the past several years. At one site, I saw it return the following year in the same area. The other finds have been random occurrences that I did not follow up on. I will be looking forward to its appearance again in this area in the future.

Monotropa is derived from the Greek words *mono*, meaning "one," and *tropos*, meaning "turn" or "turning," which refers to the nodding or downturn of the flower stem.

Continued on page 9

Stowaway

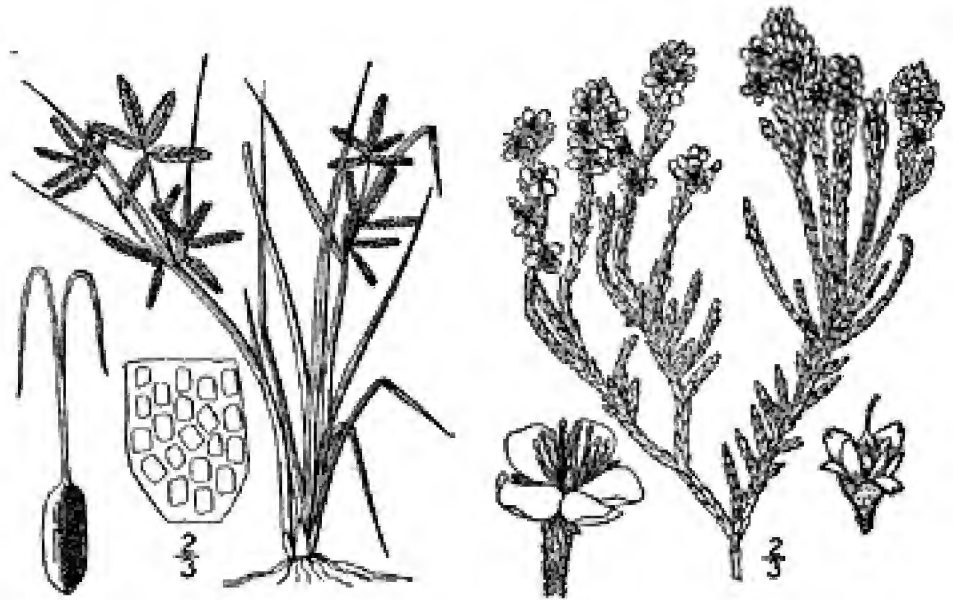
Barbara E. Plampin, PhD
Shirley Heinze Land Trust

Plants get found in the strangest places. This is the story of accession number 1926 of the Indiana Dunes National Lakeshore Herbarium, INDU 1926 for short.

It happened in the context of a conundrum: When, why, and by whom were 37 dried, unmounted specimens of mostly Duneland plants collected in 1927 and 1928 deposited in the Toledo, Ohio, Zoo Herbarium? Sixty years after collection, the Zoo turned them over to University of Michigan sedge expert A.A. Reznicek, who then transmitted them to Indiana Dunes National Lakeshore Herbarium curator Noel Pavlovic. In 1995, Noel supervised my mounting, labeling, and accessioning the specimens into the Herbarium.

Problems: Customarily, for every plant collected, the collector's name, date and location of find, and the Latin name appear on the sheet containing the specimen. Here, except for year, information was often sketchy; someone was in a hurry. The probable collectors were Father J.A. Nieuwland (1878-1936) of Notre Dame or an unnamed companion, but nomenclature didn't always match that of Swink and Wilhelm, the Herbarium's "Plant Bible." Sometimes the Kartez and Kartez two-volume synonymy of plant names failed, necessitating further search. Sites like "Northern Indiana" and "Indiana Dunes" were vague. When Noel and a biotech searched Notre Dame's Greene-Nieuwland Herbarium for duplicates of INDU specimens collected on the same day, they found only four. INDU 1926 was not among them.

For mounting, specimens must be dirt-free, but harried collectors don't always clean their finds. I remember teasing the mud from the roots of a labeled false heather (*Hudsonia tomentosa*) with a paint brush when, lo and behold, there appeared roots, leaves, and flower scales of an unlabeled plant. I had discovered a



Brook nut sedge likes it damp; false heather likes it dry. How did these two become enmeshed in the same sample?

mountable plant, brook nut sedge (*Cyperus rivularis*), a fairly common, though usually overlooked member of the sedge family. Our shoes flatten most of these plants when we're looking for more glamorous flowers.

Mounted as INDU 1926, my discovery displays modest charm. The six-inch tuft of curving, thread-like leaves and thin stalks bears umbels of rather narrow spikelets surmounted by thread-like bracts. The spikelets are composed of neatly overlapping scales with reddish-brown pigment chiefly at the base. (Fresh scales are shiny. Older plants look coarser and stiffer.) A mystery: false heather likes it dry, but brook sedge likes it damp. How did these two get together?

The notebook sheet for INDU 1926 reads, "The collector did not provide a label for this specimen. It was found during identification of 1912, 2 of 2, *Hudsonia tomentosa* Nutt., collector J.A. Nieuwland, July 28, 1929. INDU

1912 comes from "Indiana Dunes." Identifications are correct because they were verified by the Morton Arboretum botanist in December 1995. Noel told me he thinks the two plants were growing in a transition zone.

Nieuwland may have collected these two plants at "Baileytown, Porter County," an obliterated site northwest of Porter, Indiana, where he collected goat's rue (*Tephrosia virginiana*) on the same day.

Some Books

Britton and Brown. An Illustrated Flora of the Northern United States and Canada. Dover, 1970 (1913).

Kartez and Kartez. A Synonymized Checklist of the Vascular Flora of the Northern United States, Canada, and Greenland. Timber Press, 1994.

Swink and Wilhelm. Plants of the Chicago Region. 4th edition. Indiana Academy of Science, 1994.

Take a [Mini-]Hike! continued from page 3

Directions: Take the 45/46 Bypass east from Highway 37. Turn left (north) at the stoplight across from the State Police building. Drive a short distance on Matlock Road, and turn left onto Headly Road for about 0.6 mile to the IU parking lot on the left. Trail maps should be available behind the large wooden signboard there. Or, you can download them from the website, www.iub.edu/~preserve/, which also maintains a checklist of flora and fauna. It is not comprehensive; we heard Barred Owls calling and they are not on the list. However, it is helpful.

The Fields

An attractively landscaped 58-acre apartment complex, The Fields was formerly the Rogers Farm. The website, www.thefields.com/story/index.html, has a map of the complex, including the trail that runs between the lakes and Jackson Creek. The two barns on the property still exist. One, with a picturesque weathervane atop, now serves as the Clubhouse. The other barn houses landscaping equipment and gardening supplies.

Directions: From Moore's Pike, turn in at the barn and park somewhere on the east side. The trailhead is east of the barn parking lot. Head east, then turn north along the stream, through the trees. You will pass two large ponds. The Southern Lake, as it's called, is the prettier one. It even

has fish in it, and I was told the water is freezing cold even during heat waves! The shallow Northern Lake is little more than a scum-covered mudhole. A picturesque old log cabin, built in 1870 and moved from the Lake Monroe area, is between the two. The trail ends at Fenwood Drive. Either walk back through the well-landscaped grounds, or retrace your steps along the trail.

Olcott Park

From Rogers Road, turn south into The Stands Road and drive its length (about one mile) to Olcott Park. On your right you'll see a paved walkway heading through a grassy area interspersed with trees, reminiscent of a European park. This walkway leads down into a small but authentic bit of forest, with old trees and shrubs and a ravine with Jackson Creek bubbling below. Where you emerge from the forest, the creek gets more impressive. The walkway crosses over a bridge and continues on through grassland, ending at the Sherwood Oaks Park parking lot. Obviously, you can also access this trail from the maze of the Sherwood Oaks housing development, if you wish.

Lower Cascades

This one is REALLY a mini-hike! Bloomington's oldest park, established in 1924, is really two parks, Lower Cascades (the original portion) and

Upper Cascades with adjoining golf course, developed a few years later. Lower Cascades Park has a beautiful waterfall at the end of a short (0.2 mile) trail that runs alongside a rocky creek. On a hot day you can feel the delicious coolth of the waterfall as you approach. If you feel energetic, climb the rocks up to the old road that runs along above the creek, paralleling the trail, back to the parking lot. If you don't, you can "set a spell" on one of the huge boulders and listen to the rushing water.

Early spring is the best time to visit, but any time of the year can reveal special treasures. On a very warm evening in late May, we enjoyed seeing large-leafed waterleaf, green dragon, black maple, and slippery elm. Other trees include black walnut and Ohio buckeye. And always we were accompanied by the sound of rushing water.

Directions: Take the 45/46 Bypass north to N. Walnut and turn left (south). Turn right (west) at the first intersection, N. Old State Road 37. After driving about one-half mile north on Old Walnut you will see the parking lot across the stream. You must drive through the stream to reach the lot. Then, on foot, approach the South Shelter but instead turn left as you near the hill and proceed in westerly fashion along the trail.

Not Your Ordinary Flower continued from page 7

Hypopithys is said to mean "under Pines," referring to where it is often found.

Pinesap is also an interesting plant to research in various wildflower guides and on the Internet. Today, many sources place *Monotropa hypopithys* in the Monotropaceae, or Indian pipe family. Historically, they have been placed in the Ericaceae (heath family) or the Pyrolaceae (wintergreen family), and some botanists apparently still continue to do so. Nomenclatures

aside, one can still find a wealth of information and some beautiful photography of these intriguing little plants.

For additional information:

Gleason and Cronquist, *Manual of Vascular Plants of Northeastern United States and Adjacent Canada* (1991).

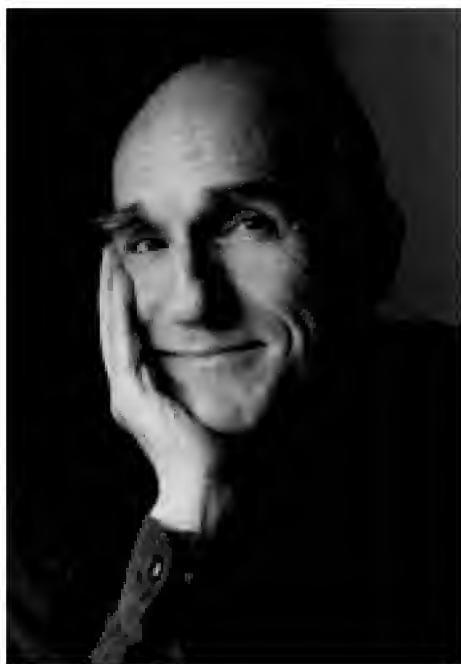
National Audubon Society Field Guide to North American Wildflowers Eastern region (2001).

Enter *Monotropa hypopithys* in your search engine on the Internet.

Dan McDowell is an INPAWS member and retired steelworker from Hobart, Indiana. His favorite pastime is searching the natural areas of the Dunes region for orchids and other interesting plants.

Thirteenth Annual INPAWS Conference

Saturday, November 4
Bradford Woods, Martinsville, IN



Keynote Speaker: Scott Russell Sanders, "Wild and Scenic Indiana"

Scott Russell Sanders is Indiana's most heralded environmental essayist and novelist. A Distinguished Professor of English at Indiana University, his work is concerned with people's place in nature and the practice of community. **"The longer you stay in a place out of wholehearted desire, the more likely you are to learn about its human and natural history, to help preserve what's worthy, restore what's damaged, and create what's lacking."** He will speak on wild and scenic Indiana, a topic on which he coauthored a book with Rich Clark in 2005.

Dr. Sanders has authored twenty books and received the Lannan Literary Award for nonfiction, the PEN Award and Kenyon Review Award for fiction, the Great Lakes Book Award, the Ohioana Book Award, and the Associated Writing Programs Award. His work has appeared in more than two hundred anthologies and fifty magazines. He serves on the national advisory boards of the Orion Society and Trust for Public Land and on the advisory board of south central Indiana's Sycamore Land Trust.

Conference Schedule

- 8:00 AM Registration
- 8:30 AM INPAWS Business
- 9:00 AM Keynote Speaker
- 10:00 AM Refreshment break, book sale, and book signing by Scott Russell Sanders
- 10:30 AM Concurrent Session I
- 11:30 AM Concurrent Session II
- 12:15 PM Lunch and informal discussions with INPAWS committee chairs or chapter leaders.
- 1:30 PM Concurrent Session III
- 2:30 PM Concurrent Session IV
- 3:30 PM General Session
- 4:30 PM Close
- 5:00 PM Guided hike of Bradford Woods

Concurrent Session I

Sometimes it's easy to lose sight of the shrubs for the trees. There are many more species of native shrubs than trees in Indiana and they are the unsung stars of the forest. **Dr. Marion Jackson** will introduce you to many of the **native shrubs** that grace southern Indiana's forests.

You want your yard to be a beautiful leafy glen, but it looks more like an overgrown jungle? Want some help in figuring out how to design the yard of your dreams? **Anita Bracalante**, landscape designer and garden columnist for the Bloomington Herald Times, will speak on **designing your own landscape**, focusing on the use of native trees and shrubs.

Concurrent Session II

Hidden in the hills and hollers of southern Indiana are many species of native orchids. **Mike Homoya**, botanist for the DNR—Division of Nature Preserves, will bring **south central Indiana's orchids** out of hiding and tell you all about these reclusive plants.

If garlic mustard is marching through your woods and Japanese honeysuckle is threatening to smother your yard, come listen to **Ellen Jacquart**, Stewardship Director for the Indiana Chapter of The Nature Conservancy, speak on **how you can get the upper hand over invasives** on your land.

Concurrent Session III

Barrens are rare and beautiful wildflower-filled openings in the forested hills of southern Indiana. **Dr. Alice Heikens** of Franklin College has studied **barrens** across the Midwest for many years and will share her knowledge on the natural history of these botanical jewels.

A **Plant Rescue Certification workshop** is being offered by **Dave and Dawn Bauman**, INPAWS Plant Rescue co-chairs. This session will teach you the basics of effective plant rescue including a hands-on activity on wildflower propagation, an important method of rescuing native plants.

Concurrent Session IV

South central Indiana has some of the most impressive karst features in the world. **Kriste Lindberg**, karst educator with the City of Bloomington, will give you a virtual tour of the caves, swallowholes, sinks, rises, and underground rivers that make up our **karst resources** and explain their significance.

Are you steamed because deer and rabbits are eating all your flowers? **Wildlife-resistant landscaping** is something many of us are looking for, and **Carolyn Harstad** has lots of tips to share on how to keep wildlife from treating your yard like a salad bar.

REGISTRATION AND DIRECTIONS

Registration materials were mailed in September. If you did not receive a registration form, visit the INPAWS website at www.inpaws.org for a printable registration form.

Bradford Woods is located at 5040 State Road 67 North. Bradford Woods is 4.7 miles north of State Road 39 at Martinsville and approximately 8 miles south of Mooresville.

General Session

Why are adolescent oak trees rare in Indiana's forests, and what does this mean for wildlife in the future? **Allen Pursell**, Interior Low Plateau Director of The Nature Conservancy, will speak on the **secret lives of acorns**. This wide-ranging presentation will explore the sometimes strange and subtle oak forest, the cornerstone of the Central Hardwood Region.

As the number of oak trees appears to be diminishing across the Eastern US we may see an unexpected change in songbirds, bats, and even caterpillars. It's even possible we may be seeing the beginning of the end of the ubiquitous oak forest, a landscape that future generations may rarely experience.

Some unintended consequences of natural resource policy decisions will also be discussed, illustrating how they affect not only oak forests and wildlife, but everything from insurance to epidemiology.



Between sessions, enjoy INPAWS' legendary snacks and patronize the book sale, where many references on native trees, shrubs, flowers, and ferns of Indiana will be available.

Reforesting a Floodplain

The banks of the White River are home to an experiment in restoring native forest on a disturbed riverbank. A project of IUPUI's Center for Earth and Environmental Science, the site serves as a living learning laboratory for university students and others in the community.



Approximately 1,400 trees have been planted in an eight-acre strip of land between 10th Street and New York Street along the White River in downtown Indianapolis as part of an experimental floodplain reforestation program. The one-mile stretch of riverbank is now evolving into a wildflower meadow and shrub/sapling habitat as the trees grow and other species gradually recolonize the area.

The massive experiment will test the best way to restore riverbanks by comparing the three most common methods for planting trees to restore native forests. A minimum of five years of monitoring and assessment will provide valuable data on reforestation strategies.



Planting Styles

The Lilly ARBOR Project tests three methods for floodplain or bottomland forest restoration that are in common use in the Midwest today:

Containerized plants: Mow and herbicide; 310 trees in 3-gallon containers planted on 12-foot centers

Bare root seedlings A: Mow and herbicide; cut turf in random pattern; 400 seedlings planted on 12-foot centers

Bare root seedlings B: Mow and herbicide; cut turf in rows; 400 seedlings planted on 12-foot centers; weed inhibitor mat around trees; native wild rye grass between rows to control competition; fertilize

The site is divided into north and south sections, each with four one-acre plots. Each method is used in two one-acre plots and compared to two unplanted control plots that are simply mowed and herbicided.

Information for this article was adapted from the Lilly ARBOR Project website, www.cees.iupui.edu/Research/Restoration/ARBOR/index.htm. The project is founded on an Indiana University–Purdue University at Indianapolis sponsored partnership with Eli Lilly and Company, the Rotary Club of Indianapolis, and the City of Indianapolis. Photos by IUPUI Center for Earth and Environmental Science.



Tree Species Planted

Twelve tree species were planted in the experimental plots. These were selected from an inclusive riparian (river margin) tree list recommended to the Lilly ARBOR Project Advisory Board, narrowed to include only those species occurring in geographic range of the Tipton Till Plain Natural Region. The Advisory Board further excluded extremely rare or habitat-restricted species (e.g., rock elm and blue ash) and excluded American elm due to Dutch elm disease killing the tree before it gets to canopy height.

| Scientific Name | Common Name |
|-------------------------------|-----------------|
| <i>Aesculus</i> sp. | Buckeye species |
| <i>Acer rubrum</i> | Red maple |
| <i>Acer saccharinum</i> | Silver maple |
| <i>Celtis occidentalis</i> | Hackberry |
| <i>Crataegus</i> sp. | Hawthorn |
| <i>Fraxinus pennsylvanica</i> | Green ash |
| <i>Gleditsia triacanthos</i> | Honey locust |
| <i>Platanus occidentalis</i> | Sycamore |
| <i>Populus deltoides</i> | Cottonwood |
| <i>Quercus bicolor</i> | Swamp white oak |
| <i>Quercus muhlenbergii</i> | Chinquapin oak |
| <i>Salix nigra</i> | Black willow |

Ecological Value

Riparian forest corridors are important habitat components of the landscape, especially in urban areas where other habitat is scarce or severely degraded. The restoration of these areas not only brings habitat diversity but can enhance water quality and help curb flooding.

The Lilly ARBOR Project will complete the last key component of a conservation corridor through Marion County. The project will also help to improve the ecological function of the White River floodplain.

Floodplains in their natural form are beneficial for many reasons:

- Floodplains reduce the number and severity of floods. During high water events, some of the water is absorbed by the floodplains, helping to keep the river from overflowing. The absorbed water can then be returned naturally to the stream during times of low water. If a high water event is large enough, water will overflow the channel of the river and spread over the floodplain, which slows the flow of the water and helps prevent severe erosion and flooding downstream.
- Floodplains minimize non-point source water pollution and filter storm water. The resident vegetation helps filter contaminants out of the water flowing into the river.
- Floodplains are home to many types of plants and animals. Adjacent forests and wetlands provide habitat for insects, birds, reptiles, amphibians, and mammals. Vegetated floodplains provide shade for the adjacent rivers and streams, increasing dissolved oxygen levels and consequently improving habitat for aquatic plants and animals.

- Floodplains lend aesthetic beauty and outdoor recreation opportunities to the landscape.

Educational Impact

The Lilly ARBOR Project offers a much-needed outdoor classroom and study area. Through the CEES service learning program, IUPUI faculty and staff from four schools and professional environmental managers work with area high school and middle school students, IUPUI students, other Indianapolis-area university students, and community members to conduct research and maintain the restoration.

The interdisciplinary collaboration and use of the Lilly ARBOR Project has permitted several hundred individuals to contribute to the research and maintenance of the site while educating them about the importance of maintaining biological diversity and participating in environmental stewardship.

We're building a forest—and we're doing it with scientists, students, teachers, civic groups, and corporate and community volunteers.



Sudden Oak Death Arrives in Indiana

In mid-July, bad news showed up in Indiana in the form of Sudden Oak Death. A fungus-like microorganism known as *Phytophthora ramorum* was found in a *Viburnum* shrub in the garden section of a hardware store in Portage. Since its discovery in North America in 1995 in central coastal California, this pathogen has caused widespread dieback of tanoak and several oak species, referred to as Sudden Oak Death, in the central and northern coastal counties of the state. The pathogen has also been found in nurseries in California, Oregon, Washington state, and Canada's British Columbia. Despite attempts to keep infected nursery stock out of Indiana, an Oregon-based supplier sent the infected *Viburnum* to Portage, and these shrubs were sold to the public. It is not known how many infected shrubs were sold or where they went in Indiana.

State Entomologist Bob Waltz said that Indiana has been rated as being at moderate risk for Sudden Oak Death by the U.S. Forest Service. Most of the state's at-risk sites are in the southern region, where oak forests and elevated topographies could potentially support the disease. "Our goal is to keep this disease from becoming established in our Indiana landscapes and forests, and the best way to achieve this goal is to educate the public about this disease," notes Dr. Waltz.

Due to *P. ramorum*'s broad host range and nondescript symptoms, trees and shrubs infected with the pathogen are difficult to distinguish from those with other diseases. In trees, *P. ramorum* causes large, bleeding cankers on the trunk or main stem, accompanied by the wilting and browning of leaves. Tree death may occur within several months to several years after

initial infection. Infected trees may be infested with ambrosia beetles, bark beetles, and sapwood rotting fungus. Symptoms of leaf infection vary with host, but often consist of dark gray-to-brown lesions with indistinct edges. These symptoms can readily be confused with those of other diseases.

The Purdue University Plant and Pest Diagnostic Laboratory maintains a website (www.ppd.l.purdue.edu/PPDL/SOD.html) that includes a checklist to assist growers and homeowners in determining whether they have a sample that should be submitted for further evaluation.

—Ellen Jacquart

Pot Recycling at IMA

Indiana gardeners have a new opportunity to help the environment. The IMA Horticultural Society is recycling plastic pots on Saturday, October 14,

between 10 a.m. and 2 p.m. at the IMA Greenhouse parking lot, 4000 N. Michigan Road, Indianapolis.

The pot-scrubbing volunteers will accept standard, nursery-size pots; for example, one-quart, five-pint, one-gallon, 6-inch round, or 4-1/2-inch square (No. 5) pots. In preparation, please rinse or clap the loose soil out of the pots. Polystyrene cell packs for annuals or most of the flimsy flats or trays that contain them are not useful.

The Missouri Botanic Garden's successful pot recycling program took in over 70,000 pounds on six weekends this past spring. Dr. Steven Cline, who started MoBot's program in 1998, gave a vivid image of the tons of plastic that gardeners typically throw out. "Imagine Busch Stadium [St. Louis] filled one-and-one-half times to the top, and you have a good picture of what is being deposited each year."

Clean out your garage or garden shed and do the right thing this year with your surplus plastic pots. Ask your



Drawing by Ellwood Ross.

neighbors for their extras, too! And please don't drop off your pots until October 14; the Greenhouse staff cannot cope with them on a piecemeal basis.

—Mary Ellen Gadski

Seeking Mini-Hikes

INPAWS Journal seeks your reports on those postage-stamp native habitats embedded in cities and suburbs in your own locale.

If you discover a worthy mini-hike site, tell us when you visited the area, how you accessed it, and what you saw and heard. In the interest of encouraging more mini-hikes to refresh body and soul, we will compile a directory of such sites and publish member reports in future issues (see submission instructions on page 2).

SWCD Tree & Shrub Sale

Fall is for planting, and a good time to embellish your home and enhance your wildlife habitat with native trees and shrubs.

As part of its backyard conservation effort, Marion County Soil and Water Conservation District is supporting tree planting efforts by providing mostly native, midsized container trees and shrubs at a reasonable price.

Order by October 9 for pickup in northwest Marion County on October 21. The pickup site is the Normandy Farms subdivision information center at 7802 Marsh Road, Indianapolis, IN 46278.

Tree species available include red maple, river birch, northern pecan, Norway spruce, swamp white oak,

overcup oak, bur oak, chinquapin oak, red oak, tulip poplar, speckled alder, redbud, bald cypress, sweetgum, and northern catalpa.

Shrub species include American elderberry, serviceberry, buttonbush, red chokeberry, red osier dogwood, nannyberry viburnum, arrowwood viburnum, winterberry, and witch-hazel.

Call the SWCD office at 317-780-1765 or visit their website at www.marionswcd.org to obtain a brochure and order form that includes tree and shrub species facts and selection criteria.

Three-gallon pots are priced at \$24, five-gallon pots at \$28, including sales tax. Home delivery is available at \$8 each for 1-4 plants, or \$7 each for 5 or more plants.

Aerial Maps Available

Now you can plan your home landscape or conservation effort with the aid of birdseye views. Full-color aerial photographs of your yard, neighborhood, or community give a better picture of your environment.

This new natural resource tool, free to the public, is called IndianaMap. It is available online at www.indianamap.org.

The user-friendly site includes layers that can be dropped in over the aerial photographs (2005 and earlier) showing elevations, boundaries, waters, and roads. Most people are able to select and print maps within minutes.

The IndianaMap website is made possible through a partnership with the Indiana Geological Survey and Indiana University ITS (University Information Technology Services).

MARK YOUR CALENDAR

October 9, Deadline for ordering trees and shrubs from Marion County Soil & Water Conservation District.

October 14, Pot recycling at IMA Greenhouse, Indianapolis, 10:00 a.m. to 2:00 p.m. Sponsored by IMA Horticultural Society.

October 14, Volunteer clean-up day in preparation for dedication of new Central Indiana Land Trust property, 9:00 a.m., Schramm Woods, Hancock County.

October 21, Tree and shrub pickup at Normandy Farms in NW Marion County

November 4, INPAWS Annual Conference at Bradford Woods, Martinsville, 8:00 a.m. to 4:30 p.m. followed by guided hike.

November 11, Tamarack (American larch) community hike in northeast Indiana, led by Lee Casebere, 10:30 a.m., Marsh Lake, Steuben County.

Watch for announcements of INPAWS events and field trips in the mail, via email, and at www.inpaws.org.

Coming Attractions

How can we attract and engage INPAWS members?

That was the subject of a task force convened in August to take stock of INPAWS' outreach to the public and to its own members. Present were president Karen Hartlep and committee chairs Don and Sophia Anderson, Mark Outcalt, Tom Hohman, and me.

Ideas flowed like water, and you will soon see some results.

First up, a new portable display to adorn the INPAWS booth at events like Conservation Day at the Statehouse, The Flower and Patio Show, or Earth Day.

The three-panel fabric-covered display comes in a handy carrying case, and offers the flexibility of changing out photos and text to emphasize different themes for different events. Watch for its debut at the INPAWS Annual Conference. Then think about how you might put such a display to use wherever you live.

Next up, a new, inexpensive brochure with which we can shower the state.

We want people know that INPAWS can be their resource and partner in studying, preserving, and growing native plants. The task force envisions putting this brochure in nature centers and libraries everywhere. Perhaps you'll suggest some other good venues.

We talked about expanding membership around the state and involving members beyond Central Indiana in the activities of INPAWS. Plant sale co-chair Tom Hohman suggested spawning plant sales in other areas as a way to engage existing members, draw the public, and gain new members.

Don't be surprised if committee chairs lean on you at the Annual Conference to consider taking a role in the work they do. We agreed that committees-of-one are no way to sustain an organization. Don't be afraid to say yes. We have strong committee chairs to take the lead, and you'll have fun working with them. It's a great way to develop new friendships too.

And that's not all the task force talked about. To continue the discussion,

we agreed to convene a super-committee consisting of the chairs of Education, Speakers Bureau, Website, Newsletter, Plant Sale, and Membership.

Our task—to coordinate and improve INPAWS outreach to the public and to our membership. Our aim—for people all over the state to know what INPAWS stands for, and for all of our members to get the most out of their relationship with INPAWS.

Stay tuned...our work has just begun.



Drawing by Chris Carlson in Ruth Ann Ingraham, *Swimming with Frogs*.



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and Wildflower Society

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Ripple Effect

Ruth Ann
Ingraham

The Brown County Public Library Ravine Project

INPAWS grant money does make a difference. Here's an illustration.

From the expansive east-facing windows of Nashville's handsome public library, recently constructed of native stone, visitors may look down upon a small stream meandering through a gently sloping, wooded ravine. Not so earlier. Only three years ago, invasive species screened this natural area from view during the entire growing season.

In 2002, members of the Brown County Public Library board and its director Yvonne Olinger committed themselves to be good stewards of this woodland on library property. They formed a committee of community citizens, including myself, and sought the funds needed to eradicate the array of exotic invasives and replace them with shade-loving plants native to the region. Thus was born the Brown County Public Library Ravine Project.

INPAWS stepped forward and made a significant contribution to help launch the project. With this grant and others, we hired Eco Logic from Bloomington to apply herbicides against the invasives—multiflora rose, oriental bittersweet, privet, Japanese honeysuckle, creeping euonymus, and burning bush—and to reseed with a cover of native grasses and sedges. A crew of community monitors coordinated by INPAWS member Donna Ormiston was charged with keeping ahead of the above-named culprits

that kept reappearing and, more recently, dame's rocket, *Miscanthus sinensis*, and Japanese stilt grass.

To guide us as we introduced new plants to the area, I compiled an extensive historical list from Charles Deam's *Flora of Indiana*, Butler University's Friesner Herbarium collection, a 25-year compilation of observations by DNR's Division of Nature Preserves, and personal observations. (When sorted by genus and species, poison ivy headed the list of sightings!)

To the library's woodland environment we've now added Kentucky coffee tree, dogwood, serviceberry, witch hazel, maple-leaved viburnum, yellowwood, and ostrich fern as well as spring and summer flora such as celandine poppy, bellwort, Virginia bluebell, and Indian pink.

To minimize critter damage and maximize scenic value, a deer exclusion fence installed by Designscape now encompasses the area most visible from the library windows. Stone benches tucked into outside alcoves facing the ravine invite visitors to rest and enjoy the woodland scene, where we often hear wood thrushes and other birds. This summer Pete Lennox, Brown County retiree and former Indianapolis architect, single-handedly built a gently inclined zigzag path, based on a concept suggested by Karen Hartlep, to provide safe access for volunteers who work in the lower area.



Large-flowered bellwort (*Uvularia grandiflora*). Photo ©1991 Ariele Tal, Connecticut Botanical Society.

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INDIANA NATIVE PLANT and Wildflower Society

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INPAWS JOURNAL is published quarterly for members of the Indiana Native Plant and Wildflower Society. Material may be reprinted with the permission of the editor.

All are invited to submit articles, news items, and event postings of interest to our membership. Acceptance for publication is at the discretion of the editor. INPAWS welcomes opposing viewpoints.

Please submit text and photos via e-mail to wwford@comcast.net or via land mail to INPAWS JOURNAL, 6911 Cabernet Way, Indianapolis IN 46278. Submission deadlines for specific issues are as follows:

Spring
February 23 for April 1 mailing

Summer
May 23 for July 1 mailing

Autumn
August 23 for October 1 mailing

Winter
November 23 for January 1 mailing

INPAWS Mission

To promote the appreciation, preservation, conservation, utilization, and scientific study of the flora native to Indiana and to educate the public about the values, beauty, diversity, and environmental importance of indigenous vegetation.

Membership

INPAWS is a not-for-profit 501(c)(3) organization open to the public. For membership information, visit www.inpaws.org.

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Karen Hartlep

INPAWS Never Sleeps

Greetings Native Plant Enthusiasts!

When I took on this job, I mistakenly thought most of the year's activities would take place during the "growing months" when we have our plant sale, hikes, plant rescues, invasives control, and restoration work days, with the grand finale being our fall conference. Now I realize that INPAWS activities continue in full force year-round. Some exciting opportunities have recently been offered to our organization, along with on-going efforts that our dedicated officers, committees, and members continue to support.

Our Outreach Task Force is initiating a mentor program where new members will be personally contacted to welcome them, answer questions, and encourage them to attend INPAWS events. We gained a record 29 members at our fabulous fall conference due to the great publicity generated by Gillian Harris, Ellen Jacquart, and their committee, so this will be our first round of outreach activities. (All you long-standing members, please remember to renew for 2007!)

INPAWS has just been invited to participate in planning for the site of the Indiana Wildlife Federation's office on Indianapolis' north side. They quite naturally intend to use native plants to provide food, cover, and nesting sites for wildlife, so the expertise of our members seems a perfect fit. We are pulling together a small committee—if interested, please give me a call.

The Indiana Conservation Alliance (INCA) is sponsoring its third annual Conservation Day at the Statehouse on January 23. As an INCA member, INPAWS will have a booth there, and we'd love to have a great turnout from our membership. If you're interested in participating in this important outreach effort, please contact me.

Finally, for those of you who did not attend our fall conference, I would like to introduce Wendy Ford as our new vice president. Wendy remains our newsletter editor and continues to think up new and creative ways to serve INPAWS. Outgoing vice president Ellen Jacquart keeps her role as invasives chair and just wrapped up a very successful fall conference as co-chair. Janice Gustaferrero is back as co-chair of the spring plant sale/auction, replacing Melissa Moran who will spend a couple of years providing clean water to communities in Guatemala. Finally, Mike Homoya is taking over programs/field trips from Lynn Dennis.

Thank you to all the outgoing committee chairs and officers for your great service, and welcome and thank you to our new leaders.

—Karen

Indiana Wildlife Federation

Promoting the conservation, sound management, and sustainable use of Indiana's wildlife and wildlife habitat through education and advocacy.

The Indiana Wildlife Federation (IWF) has played a part in conserving Indiana's natural resources for over half a century. As the nonprofit, grass-roots affiliate of the National Wildlife Federation, IWF works to promote the wise use of Indiana's renewable resources through educational programs like National Wildlife Week and the Backyard Wildlife Habitat program.

The Federation works with state agencies and other similar organizations to monitor what is happening to Indiana wildlife and their habitat, including lakes and rivers, air, and soil. They pay particular attention to legislation that affects Indiana's sportsmen and women, wildlife watchers, and conservationists, and of course our state's wildlife and wildlife habitat. IWF is also involved in national programs such as "Clean the Rain," which seeks to reduce mercury contamination in our air and subsequently our water resources. As fish consumption advisories increase across the U.S., this is an important tool to raise awareness of mercury contamination in Indiana's lakes and rivers.

Every year in the Indiana General Assembly, decisions are made and laws are passed that can have a profound effect on our natural resources, wildlife, and outdoor recreation activities. In its role as advocate for Indiana wildlife and conservation of habitat, IWF makes Indiana legislators aware of the positive and negative effects of existing laws and the effects of specific proposed legislation. IWF participates in study committees and testifies before the House and Senate subcommittees on bills that impact wildlife and wildlife habitat in Indiana. For information visit www.indianawildlife.org.

Brown County Ravine Project, continued from page 1

Education is a key component of our project. We want Brown County's landowners to comprehend the potential impact of invasive plants on our beloved landscape and to value our natives. Some free publicity has helped. The *Brown County Democrat* has published articles and photographs with headlines such as "Preserving Native Wildflowers: Group hopes to eradicate plants that squeeze out Brown County's selection of wildflowers that are native to this area."

On behalf of the Ravine Project, INPAWS' South Central Chapter brought Ellen Jacquart of The Nature Conservancy on two occasions to speak about exotic invasives. They also invited Gene Bush, committee member and owner of Munchkin Nursery, who showed slides and talked about "Color in the Shade Garden: Nine Months of Native Bloom," and another time spoke about shade plants generally. At all of these events we drew large, appreciative audiences from surrounding counties as well as our own.

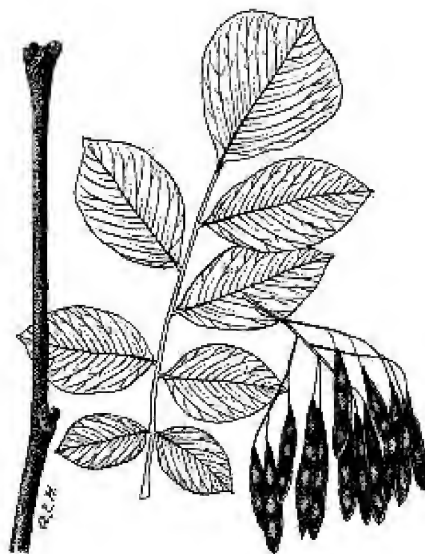
Our educational outreach extends to the Brown County 4-H Fair, where community volunteers talk with passersby about invasive and native plants and hand out literature, including our flyer about the Ravine Project and its goals. Our "Spring is Here!" plant sale raises money for ongoing needs, as has the sale of morel mushrooms (another story!) and copies of *Swimming with Frogs: Life in the Brown County Hills*.

The Ravine Project committee offers a hands-on educational component as well—free invasive plant assessments for landowners. I lifted this valuable undertaking from the shoulders of fellow committee member Dan Shaver, director of The Nature Conservancy's Brown County Hills Project. With a clipboard and printout of invasive plants known to exist in Brown County, the landowners and I hunt for the nasty intruders. On our walks

we talk about desirable plants too. Assessments take one or two hours, after which I send a report confirming those invasives we've identified, prioritizing them (worst to least), and suggesting elimination methods. The program has been well received, and several landowners are already on the 2007 waiting list.

Awareness and concern about invasive species in Brown County are indeed growing, and a few of us recently formed a steering committee to target invasive plant species countywide. Serving are representatives from the County Extension office, Soil and Water Conservation District, TNC, Brown County State Park, private camps, and concerned citizens. Our focus is on four species—tree of heaven, bush honeysuckle, autumn olive, and Japanese knotweed. Within the next two years we want to reach every landowner or land steward in the county with mailers that call attention to these exotic invasives and offer control assistance and suggested native plant alternatives.

Thanks, INPAWS, for helping in a big way to improve the environment in Brown County.



Kentucky yellowwood (*Cladrastis kentukea* syn *lutea*), U.S.D.A. Drawing, courtesy Hunt Institute.

Welcome New Members 2006

CENTRAL

Betty J. Seufert, Brookville
Beth Graham, Westfield
Lisa Madrid, Sheridan
Wayne Naylor, Noblesville
Judy Laird, Greenfield
Marilyn E. Smith, McCordsville
Bev Russell, Clayton
Carrie, Chism & Chad Vanover, Avon
Kathy Arensman, Indianapolis
Susan Beauchamp, Indianapolis
Joseph Bowles, Indianapolis
Linda & John Burns, Indianapolis
David Camp, Indianapolis
Carolyn Holder, Indianapolis
Jan Hosier, Indianapolis
Marian Keith, Indianapolis
Kim Lohr, Indianapolis
Cynthia Martin, Indianapolis
Dottie Mullennax, Indianapolis
Fritz Nerding, Indianapolis
Ruth Penner, Indianapolis
Michael Ray Smith, Indianapolis
Judy Biscan, Shaker Heights, Ohio

EAST CENTRAL

Kelly D. Krinn, Fort Wayne
David & Lois Ellsworth, Yorktown
Paul Rothrock, Upland
Jennifer Anderson, Anderson

SOUTH CENTRAL

JoAnne Himebough, Nashville
Kevin Baxter, Washington
Patricia A. Cornwell, Corydon
Linda D. Haas, Georgetown
Lois Morris, Bloomington

WEST CENTRAL

Wendy Langer, Peru
Wes Crawford, West Lafayette
Debra Steinhauer, Lafayette

INCA Legislative Priorities

When the 2007 session of the Indiana General Assembly begins in January, legislators will be deciding on important issues and putting together the State's biennial budget. INPAWS has joined with other conservation-minded organizations in the Indiana Conservation Alliance (INCA) to raise the profile of conservation in the Statehouse, and great strides have been made in the past two years.

This year, INCA is working hard to ensure that conservation funding is one of the legislators' top priorities and is lobbying for the following:

- **\$6 million for the Indiana Heritage Trust**, the only State funding source for permanently protecting natural lands such as nature preserves, trails, parks, fish and wildlife areas and forests (your license plate dollars at work).
- **\$6 million for Clean Water Indiana**, which provides technical assistance to help farmers and other property owners reduce the amount of polluted storm water runoff from urban and rural areas.

- **\$1 million for a pilot Farmland Protection program** leveraging federal dollars to establish conservation easements and limit development and non-agricultural use.

Elected officials respond to the concerns of their constituents. They need to hear FROM YOU how important conservation programs are to you and your family!

An easy and fun way to act on your principles is to come to Conservation Day at the State House on January 23. Surrounded by the many like-minded individuals in INCA's member organizations, you'll gain ample moral support to engage with your state senators and representatives about the need to fund conservation. If you cannot come to meet with your legislator in person, please make your views known in a letter or an e-mail.

For more about Conservation Day, visit www.nature.org/indiana or contact Angela Hughes at ahughes@tnc.org or 317-951-8818.



Making the Most of Your Lobbying Time

If you've never tried to influence your legislator before, you may feel a bit timid about a face-to-face meeting. Here to smooth your way are some tips shared during a training session at last year's Conservation Day.

1. **Have a 5-minute action plan.** That's all the time you'll have to speak with a member of the General Assembly in the hall, or 15 minutes at most in their office. Know beforehand which issue you will raise first, second, and third. Be prepared to state your most important points before an interruption cuts your meeting short.
2. **Speak plainly.** Don't tax your listener with unfamiliar jargon and acronyms. Make it easy for them to understand you.
3. **Make a personal connection.** Before meeting, do a little research to find something you and the legislator have in common. Did you grow up in the same community? Attend the same college? Noting similarities breaks down the natural barriers that exist when meeting someone for the first time.
4. **Don't do all the talking.** Ask an occasional question to be sure your listener is "getting it" and is actively engaged in the conversation.
5. **State your request clearly.** A pleasant chat may leave you feeling good, but it's not effective if the listener is left wondering what the point was. If you want your legislator to support specific funding in the budget, state that early in the conversation.
6. **Don't be too democratic.** If you partner with others when talking to the legislator, decide beforehand who in the group will be the chief spokesperson. Not everyone has to speak!
7. **Follow up for success.** Mail a thank you letter immediately after your visit, including any additional information that was requested. You can continue to send useful information such as fact sheets and news clippings throughout the session, and even when the legislature is not in session. Your initial meeting is only the beginning. Develop a relationship for the future.

All-American Basswood

Tilia americana L.

Easily recognized in each of the four seasons, American basswood lends a charm and dignity to Indiana forests that few tree species can match.

Rarely, if ever, occurring in pure stands, American basswood (called linn by local farmers, linden in Europe and Asia, or lime tree in England) is present in mesic woods frequently enough to be an important subdominant canopy tree. Large individuals often reach 2 to 3 feet in diameter and 70 to 90 feet tall. These mature trees have straight boles with dark grey to grey-brown trunks with distinctive deep-furrowed ridges. Vigorous trees routinely have one to several root sprouts that often encircle the parent tree in coppice fashion, a basswood trademark.

Your walk in the winter woods may result in the chance discovery of bright red plump buds, each with only two overlapping bud scales, near the tips of basswood twigs. The buds are especially beautiful following an icing storm, the ice coating magnifying the bud within, like carnelian encased in crystal.

During April's warmth, the buds expand, then open to reveal delicate, enfolded cordate leaves, toothed margins, long petioles, and 5 incised main veins. American basswood is the only Indiana tree species with leaves having this combination of characteristics. Not truly heart-shaped, linden leaves have oblique bases.

Summer is when the basswood tree becomes truly enchanting, for then

the flower buds open to expose pale yellow complete flowers, attached in clusters below a leafy bract an inch or more across and 1 ½ to 2 ½ inches long. The odor released as the flower opens is like no other in the Eastern Deciduous Forest. Especially on days with heavy, damp air and overcast skies when rain threatens momentarily, as the tree frogs call and the

yellow-billed cuckoo (or "rain crow") stutters its kuk-kuk-kuk-kuk-kalp-kalp-kalp-kalp call, the full-bodied aroma of basswoods in bloom can be detected from a quarter-mile away, especially just before dusk descends. This fragrance drives honeybees into a frenzy. The hum of thousands of bees working a large linden tree is audible from a hundred feet away. Basswood honey is nearly white, the choicest of all honeys, and a true delicacy. If you can find a specialty shop that happens to have it in stock, by all means buy it for a rare woodland treat.

About 1976, when Bill Barnes, then director of the Division of Nature Preserves, and I were working with Mr. Gilbert Lubbe toward the protection of Lubbe Woods in Dearborn County as a Dedicated State Nature Preserve, I admired the huge basswood tree located adjacent to the



Tilia americana flowers, leaves and fruits. Photos by Ohio Biological Survey (left) and Pennsylvania State University (right).

Lubbe farmhouse. Mr. Lubbe, then in his late 70s, said that his parents had planted the tree in their house yard shortly after the Civil War for its shade, the fragrance, and the honey that their stands of bees made.

In fall, as the huge heart-shaped leaves turn a lovely lemon yellow, then drop off, the bee-pollinated flowers have matured into clusters of hard nut-like spherical fruits, each about the size and shape of a plump pea. These fruits remain attached to the single leafy bract that aids seed dispersal. Later, the winds of autumn or early winter dislodge the entire structures and send them whirling through the woods, much as a wounded helicopter might tumble from the sky.

Basswood trees are equally noted for their wood properties and bark characteristics. Most likely the common name of the species derives from the long bast fibers that run lengthwise in the inner layers of the bark. These fibers were used by Native Americans to make twine and cordage for use in stitching together cattail mats for their lodges, hides or woven fabrics into clothing, or birch bark sections into canoes. They also twisted multiple strands of the fibers into rope that, in terms of strength, durability, and freedom from kinking, rivaled the twines used in rope manufacture by the pioneers. Often the fibers were retted from the bark by submerging sections of bark in water for days or weeks before separation and use.

Basswood lumber is diffuse-porous, hence smooth-grained, and nearly white to a very pale brown, hence called whitewood in Early America. Then as now, it is a prized wood for carving decoys, wood inlays, household utensils, and such. Ceremonial face masks used by the Iroquois and other tribes were carved from bass-



American basswood. Photo by Four Seasons Nursery, Montana.

wood. Weighing only 28 pounds per cubic foot but quite strong, it was favored for boxes, crates, Venetian blind slats, artificial limbs, and, interestingly, for honey frames and bee hives. Early on, it was widely sought for use in buggy and carriage manufacture, for its light weight, hence ease of towage. When I was in high school, my Dad bought a pick-up load of basswood lumber (linn) at an auction. It planed nicely in my high school shop class into stock for making light yet strong and springy farm gates.

Basswood is a handsome tree that should be used far more widely as a lawn, street, and park ornamental. Most typically, the smaller-leaved European linden is used for planting, largely because it is more generally available from nurseries. The native basswood, however, is a beautiful ornamental, moderately fast growing, and all-around the preferred species.

Indiana Native Plant and Wildflower Society

Small Grants Program Guidelines for 2007

NOTE: February 1, 2007, is the deadline for grant proposals to be submitted.

This will be the *only* time for grant proposal submissions in 2007.

INPAWS' small grants program supports projects that are in line with the mission of the society. In 1998, the Board allocated \$10,000 from the general fund to an endowment account. The interest from this account is available for grants. **The Awards Committee anticipates funding two grants of up to \$500 each in 2007.** These grants can be used in conjunction with other sources of funding for projects that support the mission of INPAWS.

The mission of INPAWS is to promote the appreciation, preservation, conservation, utilization, and scientific study of the flora native to Indiana and to educate the public about the values, beauty, diversity, and environmental importance of indigenous vegetation.

Applications are requested from groups or individuals and must be e-mailed (preferred) or postmarked by **February 1, 2007**. They will be reviewed by the Small Grants & Awards Committee.

Successful awardees **must prepare a poster or other presentation** to share with the membership at the INPAWS Annual Conference after the project is completed.

At the discretion of the Board and membership, **larger awards may be made** from time to time from the assets of the operating budget. Requests for funds for special projects may be made at any time to the Executive Committee. All requests must be made in writing with a clear statement of how the award would further the mission of INPAWS and benefit our membership.

Application Procedures for INPAWS Small Grants Program

1. Cover sheet, including:

- ▶ Name of project
- ▶ Amount requested
- ▶ Location
- ▶ Applicant/contact person information—name, address, telephone, email
- ▶ New or existing project
- ▶ Category that best describes the project—research, training, education, conservation and habitat, demonstration garden, etc.
- ▶ Prior INPAWS funding

2. Text of proposal, not to exceed 2 pages:

- a) Summary of the project, not to exceed 50 words
- b) Clear, concise description of the project, including:
 - ▶ How does the project further the INPAWS mission?
 - ▶ Why is the project needed?
 - ▶ Specific objectives to be achieved

- ▶ Specific information on how INPAWS grant funds would be used, including a detailed species list of all plants and seeds to be used
- ▶ Who benefits from the project? How many? How do they benefit?
- ▶ Names of organizations involved, if any, with a brief description of each, including number of members
- ▶ Financial resources committed to the project from other sources, if any
- ▶ Anticipated starting and completion date of the project

3. Budget sheet, showing:

- a) Labor, material, and program costs
- b) Sources and amounts of funds already raised, if any
- c) Total cost of project

E-mail 1 copy (preferred) or **mail 4 copies**

of the grant proposal postmarked by February 1, 2007 to Joan Mohr Samuels at mohrsamuels@insightbb.com or 5828 Prophets Rock Rd., West Lafayette, IN 47906.

Good Sports

Nancy Hill, Plant Afficionado

Those Cultivars Gardeners Can't Live Without



Annabelle hydrangea shines in the summer garden. Photo by Missouri Botanic Garden.

Tony Avent of Plant Delights Nursery in North Carolina says that a sure-fire way you can tell a NON-gardener is if she looks at a plant and says "Oh, that's gorgeous, but where would I put it?"

We gardeners are passionate about plants, and especially about any new plant that catches our eye. Catalogs, books, and home and garden magazines conspire to make us lust after the breeders' latest triumph—the freshest green foliage, the most brilliant blooms, the most intriguing variegation, the richest autumn hues. Only the strongest among us can resist a new cultivar.

As gardeners who love native plants, we rescue native plants, propagate them, share them with each other, and purchase them at the INPAWS plant sale each May—and we put them to work in our gardens. We set a few Virginia bluebells and trilliums among the hostas and hydrangeas. We turn

problem drainage areas into sweet wetlands with turtlehead, monkeyflower and gentian, and our backyards into wildlife habitats with butterflyweed, cranberrybush and serviceberry.

Every year we see more native plants at our local nurseries—even the big box retailers—and not just the species are available, but many cultivars of them as well. That puts the native plant purists among us in a quandary. Can we consider these cultivars natives? Does planting them in our gardens violate the principles that led us to favor natives over exotics?

A cultivar is a plant considered sufficiently different from its parent species to have its own identity. Plant breeders select among naturally occurring variations for their garden-worthy characteristics, or conduct breeding programs to develop specific traits. The name of the resulting cultivar is written in single quotation

marks following the plant's genus and species names, for example, *Monarda didyma* 'Marshall's Delight'. And just to make things confusing, a plant can have a marketing name that is different from its cultivar name. For example 'Bailtiger' is the actual cultivar name of a staghorn sumac sport marketed by Bailey Nurseries as Tiger Eyes sumac. When a cultivar receives a plant patent, it is denoted by the number that follows "PP" on its label. "PPAF" with no number means the plant patent is applied for.

What do we get from cultivars? Often a brighter or different color, a better (perhaps more compact) growth habit, prettier fall color, better flower production, better disease resistance, a pretty leaf variegation, or a longer bloom period. *Hydrangea arborescens* is a somewhat rangy native woodland shrub. Its cultivar 'Annabelle', on the other hand, is a garden workhorse if ever there was one, producing profusions of lime green and then white snowball blossoms all summer long.

Joe-Pye weed is another good example of a successfully cultivated native. Spotted Joe-Pye weed (*Eupatorium maculatum*) can grow over 8 feet tall in the wild, a daunting prospect for a home garden. The cultivar 'Gateway' was developed to reach its zenith at around 5 feet and, when cut back in early summer as suggested by Tracy DiSabato-Aust in her popular *The Well-Tended Perennial Garden*, it becomes a lush, rounded, purple-headed plant of about 3 feet, a handsome specimen in a perennial border.

Many cultivars are produced in dedicated selection and hybridization programs—some academic, some commercial, some a hybrid of both. But the surprising truth is that most cultivars are simply discovered. By sheer dumb luck.

Good Sports, continued

Like anything that reproduces sexually, a plant is subject to mutation, a spontaneous rearrangement of DNA. Over half of the new, exciting plant introductions we can purchase today are these genetic anomalies, sometimes called sports. They had a characteristic different from the plants surrounding it, a characteristic that caught someone's eye.

One day Steve Jergenson, an employee of Bailey Nurseries in Minnesota, was in the field taking inventory in a stand of *Rhus typhina* 'Laciniata', a cutleaf cultivar of our native staghorn sumac. Laciniata's fernlike leaves made it a popular cultivar, but it still grew to over 20 feet and suckered vigorously. Steve saw a small plant he thought was sick, or chlorotic. Its leaves were not dark green, but light yellow. He brought it to the attention of the growers, who scratched their heads and said, "What the heck, let's see what it does."

They grew clones and evaluated them. The new leaves started out a vivid chartreuse, changed to a bright yellow in summer, then turned a stunning orange and scarlet in fall. The clones had fuzzy, purple-red stems that angled upward, while the lacy leaves drooped downward to give a lovely oriental habit. To their delight, the growers also found that the plant stayed only 6-8 feet tall and did not sucker as aggressively as its parent, making it a well-behaved plant for home gardens.

They had difficulty propagating it in quantity until they used root shoots, a time-consuming but successful method. Next, they tested it in gardens throughout the country to see what temperatures and soil conditions it would tolerate. In all, it took them nearly 15 years from discovery to having enough plants to offer for sale. They called it Tiger Eyes sumac.

An excellent sport of our American highbush cranberry (*Viburnum trilobum*), so highly praised by Carolyn Harstad in her popular book *Go Native!*, was discovered by Bailey employee Freddy Garcia, a field worker. One fall day he noticed a smaller-than-normal, compact plant with extra brilliant red-orange color. It was developed, propagated, and

the gardening public. All of them were found by employees.

A field discovery that has become a landscape staple is the Winter King hawthorn, *Crataegus viridis* 'Winterking', which just celebrated its fiftieth anniversary. It was discovered by Bob Simpson, owner of Simpson Orchard in Vincennes, Indiana. One day he spied a small hawthorn tree growing in a fence row that still had its berries when others were gone. The berries seemed bigger as well, and the tree had a silver-gray bark peeling off to reveal an attractive orange inner bark. Simpson propagated it, and now Winter King is the tree that can be seen in the dead of winter displaying cheery masses of bright red fruit, sometimes in gorgeous contrast with snow on its limbs—a treat for us and the birds.

Can we call a plant derived from the "species" a native? Should we plant cultivars in our "native gardens"? Who knows? But don't tell gardeners you are going to take away their Silver King artemisia, or Alma Potschke aster, or Hot Lips turtlehead, or Magnus and White Swan echinaceas, or Kobold liatris, or Marshall's Delight and Jacob Kline and Raspberry Wine monardas, or Husker's Red penstemon, or Bright Eyes and David and Eva Cullum phlox, or

Goldsturm black-eyed susans. Strict definitions aside, perhaps we can simply allow ourselves the joy of growing what we love where it loves to grow.

Cultivars offer us a veritable smorgasbord of choices. They satisfy our thirst for variety. They pique our curiosity. But let us not forget the assets of the original wild species—those tough, determined natives that, like 100-year old roses in an abandoned Texas cemetery, need no gardener's help to survive.



Tiger Eyes sumac is a yellow-leaved sport of our native *Rhus typhina*. Photo by Lee Grimes, Fort Pond Native Plants.

is now offered for sale as the cultivar 'Alfredo'. It grows to a compact 5-6 feet tall, making it an ideal viburnum for planting close to the house where its dense foliage will soften a bare wall.

Bailey employees also discovered a sport of *Acer saccharum*, our native sugar maple, that has unsurpassed intense orange-red, long-lasting fall color. It became *Acer saccharum* 'Bailsta', marketed as 'Fall Fiesta'. Through the years, Bailey has introduced around 60 new sports to

Bats in Your Backyard

Laura Hohman, Bat World Hoosier Hills

It's not unusual to encounter bats in your own backyard. You may have any number of opportunities to view them without ever leaving home.

1. In or on your own house...attics, walls, roofs, and windows

The species you are most likely to encounter in your home is the big brown bat (*Eptesicus fuscus*). The highly adaptable big brown has taken advantage of the availability of roosting sites in and on houses and manages to thrive in Indiana despite ongoing habitat destruction. Another common denizen of human habitations, but not seen as frequently, is the little brown bat (*Myotis lucifugus*).

Bats may be seen in the home during winter months on warmer days. Bats will wake up from hibernation, and attempt to leave their roost. Sometimes they get confused and find their way into the living area of your house. Trust me, the bat does not want to be there—it wants to find the quickest route out. Do NOT attempt to handle the bat bare-handed, as there is the risk of rabies to consider. Rabies is not common in bats, but it is a deadly disease to humans.



Do not attempt to catch the bat while it is in flight. Wait until the bat lands and either remove it while wearing thick leather gloves, or place a box over it and slide a piece of cardboard gently underneath. Once the bat is contained, call a wildlife rehabber who deals with bats. A listing of bat rehabbers can be found on the Bat World website: www.batworld.org. For those of you who encounter bats frequently in your home, information on humane exclusion techniques can be found at www.austinbathospital.com/gotbats.html.



2. Flying around your yard...especially around bright lights

Merely go outside on a warm evening, and you will likely see bats flying around, taking advantage of the swarms of insects that are attracted to the lights surrounding your house. Bats are especially attracted to bodies of water like ponds or lakes. Common species of bats you might see include big brown bats, little brown bats, and eastern pipistrelles (*Pipistrells subflavus*).

You can encourage the presence of bats in your yard by putting up a bat house. Bat houses should be properly researched before purchase and placement. Bats are somewhat picky residents, and type/size/color of a bat house and location will factor into their decision to take up residence.

3. Roosting in your trees

Some species of foliage-roosting bats are eastern red bats (*Lasiurus borealis*) and hoary bats (*Lasiurus cinereus*). They are often difficult to spot, as their coloration and the way they roost help them blend in well. They hang from one foot and curl their body in such a way as to look like a hanging leaf. Your first indication of the presence of one of these bats may be when it is in danger. Many reports have been made of blue jays attacking roosting red bats, often killing or seriously injuring them. Also be watchful on the ground in the spring/summer for pups that have fallen from their mothers. Any bats found on the ground should be taken immediately to a bat rehabber. Don't forget your gloves!

Blissful Botanizing pt.2



It started with a quest for cedar posts. Rich Peine needed some for a walkway project, and his friend Andy Roller suggested using the outdoor sawmill at his brother-in-law's farm in Hardin County, Kentucky.

On his first visit, Rich noticed some "wildflowers" in what had been a hayfield by the mill; and later suggested to his wife Dee Ann that she accompany him on his next trip, which

she did. At first she was underwhelmed, seeing only the prominent invasive aliens, such as Queen Anne's lace. However, upon looking closer she realized that there was more than met the eye and decided it was worth a return visit. It is my good fortune that Dee Ann likes to have company on these botanizing trips, so one late June day we set off on our next adventure, accompanied by a baby starling Dee Ann was raising. We stopped just north of Louisville to pick up Andy who would meet up with Rich to go look at some of the caves on the property.

On arrival my heart sank. My first impression of what we were looking at matched Dee Ann's—too many invasives, not a lot of natives. We walked a few feet into the grass and looked more closely. The realization that not all the white flowers were Queen Anne's lace was the beginning. In fact, by far the predominant white-flowering plant was wild quinine (*Parthenium integrifolium*), not to mention pale spiked lobelia (*Lobelia spicata*). Next thing I knew, Dee Ann was down on her knees cooing over a *Hypericum* that needed identifying. Several hours later we had moved barely ten feet from that spot. Rich and Andy returned from their cave foray and tried to entice us to see some other flowers, but we could be persuaded to move only when they promised they had found orchids! We moved fast enough then. And they had, indeed, found *Spiranthes vernalis*...quite a few of them.

Some other plants we saw that first day included hairy wild petunia (*Ruellia humilis*), wild potato vine (*Ipomoea pandurata*), several *Hypericum* other than that first one, a purple coneflower which we believed to be *Echinacea pallida*, bee blossom (*Gaura biennis*), butterfly weed (*Asclepias tuberosa*), hairy lespedeza (*Lespedeza hirta*), toothed whitetop aster (*Sericocarpus asteroides*), pasture rose (*Rosa carolina*) and, in woodies, New Jersey tea (*Ceanothus americanus*) and common snowberry (*Symphoricarpos albus*). At this stage we didn't even look at the grasses and sedges, which abounded throughout.

Well, naturally, after stumbling upon such an unforeseen diversity of plant life, we planned on returning as soon as both our schedules permitted—this time armed with a plethora of field guides, as we had been encountering something of a problem when it came to the nitty-gritty of identifying certain plants, such as the *Hypericum*. Or the *Echinacea*, which we had to assume was *E. simulata*—a spe-

cies neither of us had ever heard of—until we could ascertain it for a fact next year. Apparently the only difference between it and *E. pallida* is pollen color, that of the former being yellow whereas in the latter it is white—and we didn't know to look!! Not enough books...

So it came about that a day in late July found the two of us once again headed for Kentucky, this time accompanied by six kittens Dee Ann was raising by bottle. We were to meet Andy at the farm, as he was bringing his jeep so we could go "further in"—which we duly did, though only after spending several hours in almost exactly the same spot as previously. Once again the diversity astounded us. In just one short month the area was almost unrecognizable. Nearly everything we had seen flowering before had finished and was developing seeds. In their place was a completely new set of plants to be identified. Now we were seeing tall blazing star (*Liatis aspera*) strewn throughout the warm season grasses, which were starting into real growth, along with the annual rosepink (*Sabatia angularis*), and multiple white spikes of the pale spiked lobelia.

Then, in an area we have come to see as the source of our most unusual plants, we found a plant neither of us could even guess at. We took photos and later spent many hours on the USDA PLANTS database and other sites trying to identify it. Finally Dee Ann sent a photo to Mike Homoya, our friendly state botanist, who confirmed we had been on the right track in suggesting it looked aloe-like. In fact it is a member of the Agave family, called *Manfreda virginica* or commonly...false aloe! Later, on our jeep ride into other pastures, we chanced



Southern mountainmint (*Pycnanthemum pycnanthoides*). Photo by the author.

upon several "cool" members of the milkweed (*Asclepias*) family, including clasping milkweed (*A. amplexicaulis*). Although this had finished flowering, the impressive, wavy-edged leaves were ample reward for finding it. We also stopped at an *Allium* which confused us and the others we asked, but most likely was *A. cernuum*, then a swathe of American senna or *Senna* (formerly *Cassia*) *hebecarpa* in full bloom...one of the best plants for attracting pollinators of all kinds, but not a plant for the formal or space-challenged garden! Next was *Asclepias viridiflora* of which we found one—and to our horror we had run over it in the jeep, bending the stem but not completely breaking it off. We tried to resurrect it to the best of our abilities, took pictures, and vowed to find it next time

we came that way. Not too far from that poor beaten up specimen we found two or three *Viola pedata* flowering on the verge of the trail we were following; this flowering seemed a tad late to me, as I usually associate them with spring. In the same area we saw several *Eryngium yuccifolium*... and here I want to reiterate what a thrill it is to see a plant I have known and used in gardens for years growing in its own natural habitat with no help from humans, except that they leave it alone, unmowed!

After this, we headed for the first time into the woods. Suffice it to say that we can't wait to see them in spring! Just to name a few of the plants we saw here: In open copses, *Monarda fistulosa* and *Pycnanthemum pycnanthoides*. Under a canopy of sourwoods and oaks, *Rhododendron*(!), some other low-growing shrubs we have yet to spend time identifying, and...caves! Plus, of course, those enticing fungi...but no, we're not doing those yet.

This late in the day we were all tired, hot, hungry, and brain-fried. We were also reluctant to give up, but common sense won out and we headed homewards, with six contented kittens asleep in their box, unaware of anything but their full bellies and the lull of the car engine. Now whose life would you choose?

Watch for more Blissful Botanizing in the next issue of *INPAWS Journal*.



Green comet milkweed (*Asclepias viridiflora*). Opposite: Dee Ann documenting that not all the white flowers were Queen Ann's lace. Photos by the author.

Basking in the Afterglow

INPAWS' thirteenth annual conference at Bradford Woods was a success, and the largest conference to date with 229 participants!

The beautiful fall weather made the forested campus of Bradford Woods a perfect setting for a day packed with speakers, exhibits, and workshops. Scott Russell Sanders, the keynote speaker, started off the conference with an overview of the natural diversity of "Wild and Scenic Indiana." Several speakers through the day expanded on this theme, talking more about the botanical and geological diversity of southern Indiana, while others spoke on how best to incorporate native plants into landscaping. The final speaker, Allen Pursell, talked about the wonder of oak-hickory forests, linking everything from acorn weevils and car insurance rates to the need for conservation of these forests.

Book sales were brisk through the day, with the new Nature Conservancy preserve guide and *101 Trees of Indiana* by Marion Jackson being the top sellers. All in all, a very full and fascinating day for attendees.

Thanks to organizers Gillian Harris and Ellen Jacquart and all the volunteers, speakers, and sponsors who made this such an enjoyable day.

Don't forget to post your souvenir INPAWS decal where it might spark a teachable moment! –Ed.

New Early Detection Publication

The Midwest Invasive Plant Network has printed a new flyer, "Keep a Lookout for New Invasive Plants in the Midwest."

The 8-1/2 x 11" sheet has photos and range maps of 16 new plant invaders in the Midwest on one side, and specific information on how to identify the species on the other side.

Some of the species, like tree of heaven, are well known already to many of us in Indiana but are just moving into states to the north of us. Others, like mile-a-minute vine, haven't yet reached Indiana, though those living in the Ohio River counties should be watching closely for it.

Every state in the Midwest and southern Ontario collaborated on this project and has set up contact information for reporting sites. In Indiana, contact the Purdue Plant and Pest Diagnostic Lab at 765-494-7071 or ppdl@purdue.edu, or call 1-866-NOEXOTIC.

To download a copy of the flyer, go to www.mipn.org. Multiple copies for educational purposes are available by contacting Ellen Jacquart at ejacquart@tnc.org.

Seeking Great Websites

When, in the course of your cyberspace meanderings this winter, you discover a really good website that is sure to interest INPAWS members, we want to know about it.

Please e-mail the link to webmaster Marcia Moore at mmoore@butler.edu. We will check it out and post information on the INPAWS site and in *INPAWS Journal*.

Swamp Milkweed Call Heeded

Becky Dolan thanks all the folks who responded to her request for swamp milkweed sites to help her Butler University honors student who is looking at genetic variation in the species. An e-mail query to the INPAWS list brought responses from 24 people all over the state. Some had the types of populations the student was looking for and even mailed her leaves. Dolan praises INPAWS for its "great networking and a great set of naturalist eyes operating around the state."

E-Idea: Bloom Alerts

When you discover that first skunk cabbage in bloom this spring at your local nature preserve, why not let your fellow INPAWS members know via e-mail? Several members have been doing this informally and have enjoyed taking advantage of those all-too-fleeting opportunities to view spring ephemerals and rare specimens.

If this idea interests you, talk it up with your chapter leadership and get a local e-mail network started. In time, we may be able to formalizing such a bloom alert system through a regional or statewide listserv.



Native Speakers in Demand

Requests to the INPAWS Speakers Bureau are already pouring in for 2007, Julie Beihold says. Her committee is seeking volunteers to give presentations at different venues around the state (but close to the volunteer's home).

Audiences include garden and conservation clubs, garden show attendees, Indiana Wildlife Federation backyard habitat workshops, schools, Kiwanis clubs, mothers' groups, and the like.

Talks usually consist of a slide show, but these are being converted to PowerPoint, so a laptop and familiarity with PowerPoint would be helpful. "The slides are scripted, so anyone can do this," says Beihold. "The audiences are friendly and very interested in the topic. We also tell people about INPAWS and its mission and activities."

Interested people can contact Beihold at iepdb@iquest.net or 317-852-8640.

And the INPAWS Award Goes To...

At the October 27 conference of the Indiana chapter of the American Society of Landscape Architects (INASLA), Karen Hartlep presented the INPAWS Award to Williams Creek Consulting for their "Grandview Gardens Stormwater Best Management Practice."

INPAWS presents this award annually to a landscape architect firm whose project prominently features plants native to Indiana.

COMING EVENTS

Tuesday, January 23

INCA Conservation Day at the Statehouse

Join fellow conservationists in influencing Indiana legislators to support a conservation ethic in the state. 8:30 a.m. to 2:30 p.m. Organized by the Indiana Conservation Alliance (INCA). To register, visit www.nature.org/indiana or contact Angela Hughes at 317-951-8818 or ahughes@tnc.org. Volunteers are needed to staff the INPAWS booth; those willing should contact Dan and Sophia Anderson at 317-849-3105 or danjand1@sbcglobal.net.

Friday, February 9

Save the Dunes Council Winter Hike

Spend a fun-filled morning exploring the winter wonderland of Northwest Indiana's open spaces. 9:00 a.m. to noon. Light refreshments will be served. For location and details, RSVP to Conni Clay at 219-879-3937 or visit www.savedunes.org.

Wednesday and Thursday, February 21-22 Ecology and Silviculture of Mixed Oak Forests

Sponsored by the Indiana Society of American Foresters and Hoosier Heartland Resource Conservation and Development, this continuing education opportunity will outline the basic ecology of oak species in general, discuss past disturbance regimes and current problems facing oak regeneration, and highlight research helping to guide the management of oak forests. Brown County State Park, Abe Martin Lodge. More information, visit www.hhrdc.org.

Watch for announcements of INPAWS events and field trips in the mail, via e-mail, and at www.inpaws.org.

The award committee looks for designs that situate native plants in an appropriate context, that use a diversity of plant material, that create plant communities, and that create an overall design effect. Among their comments on Williams Creek

Consulting's winning entry: "Their naturalistic design and use of native plants for the treatment of stormwater runoff, effective biofiltration, and enhanced wildlife habitat make this project an excellent model for development."

T.A. in Trouble

With Erythroniums came a rusty-bristly trailing evergreen plant, a little coarse, shy, and not easily found. It bore exquisite flowers, small and fragile, rivaling lily of the valley in fragrance. We called it "trailing arbutus," but all our New England neighbors called it "Mayflower." It grew in sandy, rocky woods and in evergreen swamps, always under protecting leaves, its chief desire for environment being an acid soil. It was a splendid flower for bouquets, its small clusters of rose and whitish flowers lasting in a living room several days, distilling fragrance to the very end. The first April outings on Sunday afternoons were to gather trailing arbutus.

The writer is U.P. Hedrick, Michigan pioneer of the 1870s and 80s, describing "Nature's Gardens" in the Land of the Crooked Tree (L'Arbre Croche) near Little Traverse Bay.

Trailing arbutus (*Epigaea repens*), T.A. for short, extends from Newfoundland to Saskatchewan, to Florida, and to New England and the Midwest in between. In Indiana, find it mostly in our northern counties. With us, bloom time lies somewhere between early April and early May. Our plants flourish principally on acid, north-facing dune slopes where the temperature rises more slowly in spring than elsewhere. Plants grow in rather open spaces, often near moss, with black oak (*Quercus velutina*), blueberry (*Vaccinium* spp.), and wintergreen



(*Gaultheria procumbens*). Less frequently, T.A. grows in flat, damp sites near blueberry and royal fern (*Osmunda regalis*). Strangely, our plants have little scent. (Readers' comments are welcome.)

When Abraham Lincoln's funeral train stopped in Michigan City, the local lighthouse keeper paid her respects with a wreath of trailing arbutus

(Noel Pavlovic personal communication). Today such a tribute would extirpate the Indiana Dunes National Lakeshore's T.A. On the latest (2005) Division of Nature Preserves' "Indiana County Endangered, Threatened and Rare Species List" for Porter County, the little shrub appears as "watch list," a category meaning something may go or is going wrong. This listing doesn't surprise me.

In 1993 and 2003, the Indiana Dunes National Lakeshore hired Myrna Newgent and me to find and map rare plants in the eastern part of Porter County. In 2003, though we found approximately 98 plants, T.A. had decreased dramatically. One population, documented as "plentiful" in 1993, had dwindled to a single plant, found only after two conscientious searches. Deer hoof action was probably responsible, and deer hoof action definitely had carved up another formerly abundant population—we could see the numerous trails descending the dune. Whereas small mats of T.A. are possible, no remaining plant covered much more than a hand span.

Deer are not the only problem . . .
To be continued

Reference: Hedrick, U.P. *The Land of the Crooked Tree*. Oxford University Press, 1948.

Artwork by Tina Thieme Brown, Maryland Native Plant Society.



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